Town of Warrenton, Virginia

Invitation for Bid – Culpeper Street Water Main Project

IFB Number: #04-007 **Closing Date: March 19, 2004 at 2:00 PM**

All bids must be received by the closing date and time to be considered.

One (1) original and (1) copy of each bid, including any attachment, shall be mailed or delivered to:

Town of Warrenton
Purchasing Agent
18 Court Street
P.O. Drawer 341
Warrenton, Virginia 20188

All inquiries for information regarding procurement procedures, selection criteria, bid submission requirements, or other fiscal/administrative concerns shall be directed to:

Purchasing Agent
P.O. Drawer 341
18 Court Street
Warrenton, VA 20188

Phone: 540-347-1102
Fax: 540-349-2414
e-mail staff@warrentonva.gov

For technical information relating to this IFB, please contact:

Chris Bogert, Project Engineer
P.O. Drawer 341
360 Falmouth Street
Warrenton, VA 20186

Phone: 540-347-1858
Fax: 540-349-8339
e-mail cbogert@warrentonva.gov

In compliance with this Invitation for Bid and all the conditions imposed herein, the undersigned offers and agrees to furnish the goods in accordance with the signed bid or as mutually agreed upon by subsequent negotiations.

Name and Address: _____ Phone #: _____

_____ Fax #: _____

_____

Submitted by: _____ Date: _____
Printed name

_____ FEIN/SSN: _____

_____
Signature

CERTIFICATION PAGE
RETURN THIS PAGE WITH PROPOSAL SUBMISSION

TOWN OF WARRENTON
INVITATION FOR BID

IFB NUMBER: 04-007

DATE OF THIS REQUEST: February 19, 2004

DESCRIPTION: Culpeper Street Water Main Project

BID OPENING DATE: March 19, 2004, 2:00 P.M.

The Town of Warrenton is accepting bids from qualified Class A contractors to provide and install the following waterline improvements (all amounts are approximate):

Description	Approximate Quantity
8" Ductile Iron Pipe Water Main	1750 ft
Fire Hydrants	3 Each
Water services	8 Each
Tie In to Existing Water Main	2 Each
Asphalt Restoration	800 SY

1. The following Special Terms and Conditions shall govern this procurement:

   a. Unless otherwise specified in the contract, the contractor shall furnish all the necessary personnel, materials, equipment, services and facilities necessary to complete the aforementioned description of work.

   b. There will be a **Pre-Bid Conference** and project showing held at the Town of Warrenton Public Works Facility at 360 Falmouth Street on **March 12, 2004, at 10:00 AM**. For directions please contact Kim Brown at 540-347-1858.

   c. All bids are good for sixty (60) days from the date submitted. All bid prices are good for at least 200% increase of actual quantities over the estimated quantities listed on the bid sheet.

   d. All work shall conform to the VDOT Road and Bridge specifications, Section 505, except where modified by Special Provisions, the Town Public Facilities Manual, and the Virginia Work Area Protection Manual. Any work area not conforming to Virginia Work Area Protection Manual is subject to be shut down by Engineer or Inspector.

   e. The Town reserves the right to decrease or increase the quantities on the contract.

   f. The contractor shall be responsible for keeping the roadways and sidewalks adjacent to the work area clean and free of debris.

g. **All asphalt restoration that sinks or settles within one year will be replaced within two weeks of a written notice at no cost to the Town.**

h. All driveways shall be replaced using the same dimensions as removed, or eight inches of compacted Select Backfill 21A stone and two inches of SM-9.5A Top course bituminous concrete, which ever is greater.

i. Contractor will be required to schedule with the Town and the property owner any construction through driveways and the replacement of the driveway materials.

2. The General Terms & Conditions - Construction Projects, attached as Exhibit B, shall apply to this purchase.

3. Any person submitting a bid for construction work to any building, highway, sewer or other structure, the performance of which would require a contractor's license pursuant to the provisions of Sec. 54.1-1100 of the Code of Virginia, 1950, as amended, will be required to submit **as part of their bid**:

a. Satisfactory proof that such person is duly licensed under the terms of Sec. 54.1-1100 of the Code of Virginia, 1950, as amended, including the furnishing of any such contractor's number;

b. A written, sworn statement (notarized) that the person's license is in good standing and not subject to licensure as a contractor, subcontractor or owner/developer pursuant to Sec. 54.1-1100 of the Code of Virginia, 1950, as amended; Attached as Exhibit “C”.

4. The specifications for “Culpeper Street Water Main Project” - is attached as "Exhibit A".

5. The contractor shall procure and maintain for the duration of the contract insurance against claims for injuries to persons or damages to property which may arise from or in connection with the performance of the work hereunder by the contractor, his agents, representatives, employees or subcontractors.

The contractor shall provide a certificate of insurance naming the Town of Warrenton as additional insured **and, if requested** a certified copy of said policy or endorsement(s) before commencement of contract. All insurance shall be placed with an insurer licensed to do business in the Commonwealth of Virginia. The underwriter shall be subject to the approval of the Town of Warrenton.

The contractor shall maintain limits no less than:

a. Commercial General Liability: $1,000,000 combined single limit per occurrence for bodily injury, personal injury and property damage. The general aggregate limit shall apply separately to this project/location or the general aggregate shall be twice the required occurrence limit.

b. Automobile Liability: $1,000,000 combined single limit per accident for bodily injury and property damage.

c. Workers' Compensation and Employers Liability: Worker's Compensation as required by the Code of the Commonwealth of Virginia and Employers Liability limits of $1,000,000 per accident.

6. All bids must be placed on the enclosed **Bid Sheet** to be considered responsive.

7. Payment terms are net, 30 days from date of acceptance by the Public Works Department.

8. The successful contractor may be required to enter into a formal contract with the Town of Warrenton, a sample of which is available for inspection.

9. All bids shall be accompanied by a 5 (five) percent bid bond for the total amount of base bid.

10. Performance and payment bonds with a value of 100% of the contract amount will be required of the successful contractor prior to commencing work.

ALL BIDS MUST BE SIGNED AND SEALED IN AN ENVELOPE PLAINLY MARKED ON THE OUTSIDE, "SEALED BID ON CULPEPER STREET WATER MAIN PROJECT TO BE OPENED AT 2:00 PM ON MARCH 19, 2004", AND SHALL BE FORWARDED TO THE PURCHASING AGENT.

Bids shall be opened and read aloud by the Purchasing Agent at the appointed hour and date and such of the bidders or members of the public as choose to attend.

The Town reserves the right to reject any and all bids and waive all informalities. In the event the Town Manager chooses to reject all bids, the Town will re-advertise or make the purchase on the open market. The Town, through its duly adopted policies, may reject any or all bids.

Unless all bids are canceled rejected, the Town reserves the right granted by Section 11-53 of the Code of Virginia to negotiate with the lowest responsive, responsible bidder to obtain a contract price within the funds available to the Town whenever such low bid exceeds the Town's available funds. For the purpose of determining when such negotiations may take place, the term "available funds" shall mean those funds which were budgeted by the Town for this contract prior to the issuance of the written Invitation for Bid. Negotiations with the low bidder may include both modifications of the bid price and the Scope of Work/Specifications to be performed. The Town shall initiate such negotiations by written notice to the lowest responsive, responsible bidder that its bid exceeds the available funds and that the Town wishes to negotiate a lower contract price. The time, place, and manner of negotiating shall be agreed to by the Town and the lowest responsive, responsible bidder.

The Town of Warrenton does not discriminate on the basis of handicapped status in admission or access to its programs and activities. Accommodations will be made for handicapped persons upon prior requests.

TOWN OF WARRENTON

Exhibit A
Specifications for

IFB 04-007

CULPEPER STREET WATER MAIN PROJECT

BID DATE March 19, 2004

BID TIME 2:00 P.M.

Attachment A

INDEX

GENERAL NOTES

This project is to be constructed in accordance with the most current editions of the Virginia Department of Transportation Road and Bridge Specifications and Road and Bridge Standards as amended by contract provisions and these plans. All work shall be performed in accordance with the Town's Public Facilities Manual.

The Contractor shall notify the Town in advance of commencing work thereon, and in the event of the necessity of disrupting utility or other services, he shall notify the appropriate official in charge of such utility or other services and arrange for the disruption and restoration of such service in a manner which will result in a minimum of inconvenience to the parties concerned. Notification should be given at least 48 hours in advance of any utility disruption.

Underground utility locations are approximate. **The contractor shall field verify the vertical and horizontal locations of all existing utilities at least 48 hours prior to any excavation**. Differences shall be reported to the Town immediately.

Utility conflicts not designated as a bid item will be resolved by the utility company or handled as a Change Order under Section 104. The Town reserves the right to relocate its own utilities regardless of relocation items in the Bid Sheet.

A detailed traffic plan and sequence of work must be submitted prior to issuance of Notice to Proceed for the work.

The project has several time sensitive areas, please see Section 100, Contract Completion, for the complete list.

The work area shall be kept clean at all times and all materials and debris not intended for work shall be promptly removed. Broom clean the surface of all paved areas immediately after backfilling operations. Areas outside the construction site must be kept clean at all times.

Care must be given to preserve any property pins not directly in conflict with the construction. It shall be the contractor’s responsibility to reset any property pins disturbed during construction.

The Town will allow excess spoil to be placed in fill at the corner of Gold Cup Drive and Gay Road. Asphalt or concrete may be dumped, but they must be covered at the end of the construction week. At the end of the project, the fill must be leveled and reseeded to the engineer’s satisfaction. No woody debris may be placed in the fill area at any time

END OF SECTION

SECTION 010

DEFINITIONS

1. **Contract Time Limit** - The calendar date specified for completion of the work described in the contract, including authorized extensions.

2. **Contractor** - Any individual, partnership, corporation, or joint venture that contracts with the Town to perform work.

3. **Engineer** - Either the Director Public Works or Director Public Utilities for the Town of Warrenton.

4. **Inspector** - The Engineer's authorized representative who is assigned to make detailed inspections of the quality and quantity of the work and its conformance to the provisions of the contract.

5. **PFM** - The current edition of the Town's Public Facilities Manual (PFM) with all revisions to date of project advertisement.

6. **Town** - Town of Warrenton

END OF SECTION

SECTION 050

SUMMARY OF WORK

PART 1 GENERAL

1.01 WORK UNDER THIS CONTRACT

A. The work covered under this contract comprises the furnishing of all labor, materials, equipment, tools and services and the installation and construction of all items, and the performance of all work necessary to complete the work shown or called for on the Drawings and/or specified in these Specifications.

B. The Work in this Contract shall consist of all excavation, backfill, pipe/box culvert installation, grading, restoration and erosion control items shown on the plans and specified in these specifications.

C. Town of Warrenton shall supply the Contractor with six (6) sets of approved plans and specifications and copies of approved Town standard specifications.

PART 2 PRODUCTS

All products incorporated into the work area to be new, unused, and first quality unless otherwise specifically noted.

PART 3 EXECUTION

A. All work is to be performed in a workmanlike manner by properly trained and qualified personnel under supervision of the contractor's representative.

B. All roadway work shall be performed in accordance with the latest copy of the Virginia Department of Transportation Road and Bridge Specifications and Standard Details.

C. Contractor shall coordinate excavation of borrow material with owner or owners representative.

END OF SECTION

SECTION 100

CONTRACT COMPLETION

PART 1 GENERAL

1.01 The period of performance is different for the Base bid versus the option A of the bid. See the list below to determine specific time periods. The Notice to Proceed will not be given until the Engineer feels the Contractor is prepared to begin construction, has an approved traffic control, and work schedule sequence. The same liquidated damages will be applied for failures to comply with the individual time frames. If the project is not completed within the time frames, five hundred ($500) per day in liquidated damages will be assessed for each calendar day exceeded.

A. **The portion of work on Culpeper Street must be completed in thirty (30) work days.** The construction time begins with issuance of the Notice to Proceed. Liquidated damages will be applied after thirty calendar days.

B. **The contractor will have one calendar day to perform the work necessary to tie-in to the existing line in the intersection of Culpeper Street and Shirley Avenue. No traffic closures will be allowed.** Work is to include all Class "A" asphalt restoration in the intersection. One lane of flagged traffic will be allowed on Culpeper Street for the tie-in. **The amount of time that the water can be shut off is up to four hours.** All residents must be notified a week in advance. Liquidated damages will be applied after the above time restraints. The Town anticipates that it may be easier to perform the tie in work at night, scheduling and discussions with the Town will be required for this to occur.

The portion of work at the Culpeper Street and Shirley Avenue intersection cannot be performed until the following four criteria have been met to the Engineer's approval:

1. The contractor has all materials and equipment on site, or in Town, to perform all the work necessary.

2. The contractor has proven that the work can be performed quickly and efficiently.

3. The contractor has provided an Approved Traffic Plan for the work area.

4. The contractor has provided an Approved Sequence of Work to be performed.

Upon completion of all four criteria, the contractor will be permitted to install the water main. Once the water main has been installed, it will need to be thoroughly flushed at an appropriate hydrant and put back in use within the four hour period. The period of water shutoff must be strictly adhered to as three neighborhoods will be out of water during the connection. No work will be performed on Saturday. All asphalt must be restored and traffic reopened at the intersection at the end of the construction day. Liquidated damages will be applied after the above time limitation.

END OF SECTION

SECTION 101

REGULATORY REQUIREMENTS

PART 1 GENERAL

1.01 REGULATORY COMPLIANCE

It is consistent with the intent of these Specifications to describe those performance standards, often broad and general in nature, required to provide a complete and operating system. It shall be the responsibility of the Contractor to familiarize himself fully regarding the detailed needs and requirements of any and all regulatory agencies having jurisdiction over this work. These detailed needs and requirements should be accommodated, as part of the Work, in every manner just as if they were prescribed in these Contract Documents.

1.02 REQUIREMENTS INCLUDED

Provide required personnel, equipment, and materials, to construct project according to applicable codes.

1.03 APPLICATION CODES AND STANDARDS

As a minimum standard of quality and workmanship, construction is to comply with the latest edition of the following codes and standards insofar as they are applicable:

1. Department of Health, Commonwealth of Virginia, "Waterworks Regulations", and “Sewerage Regulations.”
2. Virginia Erosion and Sediment Control Handbook.
3. Virginia Department of Transportation, "Road and Bridge Specifications."
4. American Water Works Association Standards.
5. American Concrete Institute Standards (ACI).
6. American Society for Testing Materials (ASTM).
7. American Welding Society (AWS).
8. National Electric Code (NEC).
9. Underwriter's Laboratories (UL).
10. Town of Warrenton, Public Facilities Manual.
11. Virginia Occupational Safety and Health Administration (VOSHA).

The above codes and standards are hereinafter referred to as "Reference Specifications."

END OF SECTION

SECTION 102

LINES AND GRADES

PART 1 GENERAL

A. All elevations indicated or specified refer to USGS datum. Control bench marks are at the elevation and in the location as shown on the Plans.

B. Due to the nature of the waterline project, all locations must be as follows:

1. All piping, water or sewer must have a minimum of forty-two inches (42”) of vertical cover and all crossings of existing utilities must have at least eighteen inches (18”) of clearance, except laterals or services, unless approved by the engineer.

2. All valves are to be placed 2-3 feet from the associated tees or crosses. All hydrants are to be attached using hydrant tees.

3. All waterline is to be installed approximately two feet (2’) from the existing waterline, or as specified on the plans.

C. The Engineer will establish base lines, control points, and bench marks, and will establish other pertinent monuments on the Plans. From the established lines and bench marks, the Contractor shall run all lines and levels, furnish, set and drive grade stakes, and do all other work necessary to lay out his work in accordance with the dimensions and elevations shown on the Plans.

D. The Contractor shall employ properly qualified personnel to perform the work herein described. The Contractor shall also furnish and set all template and batter boards necessary. The Contractor will be held responsible for the preservation of all stakes and marks established by the Engineer, and if any of the stakes and marks are carelessly or willfully disturbed, the cost of replacing them shall be charged against the Contractor.

END OF SECTION

SECTION 103

APPLICATION FOR PAYMENT

PART 1 GENERAL

1.01 REQUIREMENTS INCLUDED

Contractor shall submit Applications for Payment to Owner by the first day of the month. Applications will be made on standard forms provided by the Owner, which shall be the bid form unless otherwise specified. All applications must show complete schedule of values and percentage of work completed to date. Applications for Payment will not be processed without the following:

A. Supporting data for percent completion; i.e. all submittals and reports up to date.

B. Establishment and maintenance of erosion and sediment control measures in accordance with these specifications.

Retainage will be 5% of gross amount due until Final Completion unless otherwise specified in the Agreement.

In the event the contractor falls behind in work performance by more than 10%, the retainage shall be increased to 10% of the gross amount due.

Actual work progress shall be measured based on the dollar amount of work complete divided by the daily dollar value for the job. This figure shall be compared to the actual number of calendar days used.

END OF SECTION

SECTION 104

CHANGE ORDER PROCEDURES

PART 1 GENERAL

1.01 REQUIREMENTS INCLUDED

Promptly implement change order procedures. Provide full written data required to evaluate changes to Engineer and Owner. Any claim or change order submitted by the contractor shall be subject to the pre-notification requirements in Section 105.16 of the VDOT Road and Bridge Specifications, except the "Town" shall be in lieu of the Department and the Town Manager will act in place of the Commissioner.

1.02 RELATED REQUIREMENTS

A. Agreement

B. General Conditions

C. Section 103; Application for Payment

D. Section 107; Construction Schedule

E. Section 110; Definition of Payment Items

1.03 PRELIMINARY PROCEDURES

A. Owner or Engineer may initiate changes by submitting a Proposal Request to Contractor. Request will include:

1. Detailed description of the Change, Products, and location of the Change in the Project.

2. Supplementary or revised Drawings and Specifications.

3. The projected time span for making the change.

4. A specific period of time during which the requested price will be considered valid.

5. Such request is for information only, and is not an instruction to execute the changes, nor to stop work in progress.

B. Contractor may initiate changes by submitting a written notice to Engineer, containing:

1. Description of the proposed changes.

2. Statement of the reason for making the changes.

3. Statement of the effect on the Contract Sum and the Contract Time.

4. Statement of the effect on the Work of separate Contractors.

5. Documentation supporting any change in Contract Sum or Contract Time, as appropriate.

1.04 CONSTRUCTION CHANGE AUTHORIZATION

A. In lieu of Proposal Request, Engineer may issue a Construction Change Authorization for Contractor to precede with a change for subsequent inclusion in a Change Order.

B. Authorization will describe changes in the Work, both additions and deletions, with attachments of revised Contract Documents to define details of the change, and will designate the method of determining any change in the Contract Sum and any change in Contract Time.

C. Owner and Engineer will sign and date the Construction Change Authorization as authorization for the contractor to proceed with the changes.

D. Contractor may sign and date the Construction Change Authorization to indicate agreement with the terms therein.

1.05 DOCUMENTATION OF PROPOSALS AND CLAIMS

A. Support each quotation for a lump-sum proposal, and for each unit price which has not previously been established, with sufficient substantiating data to allow Engineer to evaluate the quotation.

B. On request, provide additional data to support time and cost computation:

1. Labor required

2. Equipment required

3. Products required

(a) Recommended source of purchase and unit cost.

(b) Quantities required.

4. Taxes, insurance, and bonds.

5. Credit for work deleted from Contract, similarly documented.

6. Overhead and profit.

7. Justification for any change in Contract Time.

1.06 PREPARATION OF CHANGE ORDERS

A. Engineer will prepare each Change Order.

B. Form: Change Order

C. Change Order will describe changes in the Work, both additions and deletions, with attachments of revised Contract Documents to define details of the change.

D. Change Order will provide an accounting of the adjustment in the Contract Sum and in the Contract Time.

1.07 LUMP-SUM/FIXED PRICE CHANGE ORDER

A. Content of Change Orders will be based on, either:

1. Engineer's Proposal Request and Contractor's responsive proposal as mutually agreed between Owner and Contractor.

2. Contractor's proposal for a change, as recommended by Engineer.

B. Owner and Engineer will sign and date the Change Order as authorization for the Contractor to proceed with the changes.

C. Contractor will sign and date the Change Order to indicate agreement with the terms therein.

1.08 CORRELATION WITH CONTRACTOR'S SUBMITTALS

A. Periodically revise Schedule of Values and Request for Payment forms to record each change as a separate item of Work, and to record the adjusted Contract Sum.

B. Periodically revise the Construction Schedule to reflect each change in Contract Time.

1. Revise sub-schedules to show changes for other items of work affected by the changes.

C. Upon completion of work under a Change Order, enter pertinent changes in Record Documents.

END OF SECTION

SECTION 105

PRECONSTRUCTION CONFERENCE

PART 1 GENERAL

1.01 REQUIREMENTS INCLUDED

A. Contractor's representative shall attend the preconstruction conference and present the following information for acceptance by the Town and Engineer:

1. **Construction Schedules/Sequence of Work**

B. The Conference will be held at the Town's Public Works facility after the agreement has been executed, but before the Notice to Proceed is issued.

1.02 RELATED REQUIREMENTS

A. Section 107; Construction Schedules

B. Section 110; Definition of Payment Items

END OF SECTION

SECTION 106

PROGRESS MEETINGS

PART 1 GENERAL

As a general rule, progress meetings will not be held. If, however, progress is not made as scheduled or if Owner or Engineer desires to discuss revised progress schedules or quality of workmanship or other aspects of concern, a progress meeting may be called. Contractor will be required to submit weekly written schedules outlining activities for the upcoming week on Friday of each week. Weekly schedules are to be submitted to the Project Inspector.

END OF SECTION

SECTION 107

CONSTRUCTION SCHEDULES

PART 1 GENERAL

1.01 REQUIREMENTS INCLUDED

A. Prior to the issuance of the Notice to Proceed, Contractor shall submit to Town and Engineer a proposed construction schedule that will conform to contract completion time frames.

B. Construction schedule shall be in a form which will clearly show the proposed degree of completeness of each aspect of the construction throughout the life of the contract. Bar graphs and/or PERT diagrams are acceptable forms.

C. Owner and Engineer will review schedule. Final construction schedule may be revised and accepted by all parties during the Preconstruction Conference.

D. Sequence of Work for Culpeper Street and West Shirley Avenue waterline Tie In.

1.02 RELATED REQUIREMENTS

A. Section 105; Preconstruction Conference

B. Section 106; Progress Meetings

END OF SECTION

SECTION 108

SHOP DRAWINGS, PRODUCT DATA

PART 1 GENERAL

1.01 REQUIREMENTS INCLUDED

A. Contractor shall submit for the approval of the Engineer, prior to start of construction, details or shop drawings, and manufacturer's specifications of all materials and equipment he intends to furnish under this Contract.

B. Equipment shall not be fabricated until shop drawings have been approved.

C. All shop drawings shall be checked, stamped, signed, and dated by the Contractor before submission to the Engineer. Accompany with certificate, signed by Supplier and Contractor, stating that products comply with the requirements of these Specifications.

D. Contractor shall submit two (2) copies more than the number that he wishes to have returned from Engineer.

E. Engineer's approval of Contractor's shop drawings will be general and shall not relieve the Contractor from the responsibility for adherence to the Contract, nor shall it relieve him of the responsibility for any error that may exist. Where such errors or omissions are discovered later, they shall be made good by the Contractor irrespective of any approval by the Engineer.

END OF SECTION

SECTION 109

RELEASES

PART 1 GENERAL

For work on Right(s)-of-way and in temporary and permanent easements, the contractor shall furnish a release from governing authority or property owner prior to completion and final payment.

END OF SECTION

SECTION 110

DEFINITION OF PAYMENT ITEMS

PART 1 GENERAL

1.01 THE DEFINITIONS OF ITEMS AND BASIS OF PAYMENT ARE AS FOLLOWS:

1. Mobilization / Demobilization

Lump Sum price for moving and removing all personnel, equipment, and materials to the site. Price to include moving all personnel, equipment, and materials to perform Option A work at the end of the Base project if elected by the Town. Price to include replacement of all fencing, mailboxes, lawn landscaping, and other appurtenances that are disturbed during construction. Price to include performing all necessary stake outs, cut sheets on project, etc. Price includes resetting any disturbed property pins by a registered land surveyor. Price to include clearing, grubbing, tree and brush removal/trimming, temporary relocation of fences, mailboxes, and any private property and demolition as required. **Price also includes all test pits, locating utilities at least 48 hours prior to construction, and saw cutting necessary.** Price to include the drawing of "As-built" drawings upon completion of all work performed.

2. Temporary Traffic Control Signage

Lump sum price for to provide, install, and maintain temporary traffic control signage as per the Virginia Safe Work Area Manual and the Town Engineer. Price to include all signage and cones to maintain safe vehicular and pedestrian traffic in or near the construction site. Price to include all materials, labor, and equipment.

3. Traffic Barrels

Price per barrel per day for all required VDOT Traffic Barrels used as per the Virginia Work Area Protection Manual and the approved Traffic Control Plan. Price includes setup and maintenance throughout the construction project. Price includes all materials, labor, and equipment. The Town will not pay for the use of traffic cones, only the traffic barrels. Barrels will be used in major traffic areas or areas of increased danger. Any costs incurred during liquidation damages will be the responsibility of the contractor.

4. Flagger Service

Price per hour for certified Flagger service as per the Virginia Work Area Protection Manual and the approved Traffic Control Plan. Price to include all materials, labor, and equipment. Any costs incurred during liquidation damages will be the responsibility of the contractor.

5. Temporary Silt Fencing

Price per linear foot to set up and maintain silt fence throughout construction including all necessary measures to control project related erosion and sediment runoff in conformance with the plans and Section 117 of these specifications. Price includes all materials, equipment, and labor necessary.

6. Ductile Iron Water Main

Price per linear foot for installation of Ductile Iron Water Main to lines and grades indicated in the plans and as per the Town PFM. Price to include all clearing, grubbing, excavation, backfill, testing, flushing, sterilization, required blocking and any specified bedding. **The Town of Warrenton will provide all the 8" Ductile Iron Class 52 Water Main. The Town will also provide all the valves, tees, bends, and Fire Hydrants required. It is the responsibility of the contractor to come to the Town Shop prior to Notice to proceed and determine if there a re any additional fittings or accessories necessary. The material will be located at the Town Shop at 360 Falmouth Street.** The contractor is responsible for moving the pipe and accessories to the site. Price includes all sheeting, shoring, safety devices, and disposal of excess materials. Price to include restraining all joints mechanically, Megalugs, and the use of solid concrete dry blocking at all fittings and bends. All work is to be performed to Section of 140 of this contract and the Town Public Facilities Manual (PFM). Price to include all

testing and flushing. Price includes all materials, labor, and equipment.

7. Fire Hydrant

Price per each to install fire hydrant. Price to include all sawcutting, excavation, backfill and any specified bedding to install a hydrant tee in the mainline, all 6" ductile iron water main necessary, a 6" gate valve, fire hydrant and all necessary blocking required. **The Town of Warrenton will provide all the pipe, fittings, valves and hydrants materials. It is the responsibility of the contractor to come to the Town Shop prior to Notice to proceed and determine if there a re any additional fittings or accessories necessary. The material will be located at the Town Shop at 360 Falmouth Street.** The Contractor will be responsible for providing and installing the all thread and nuts for the connection of bends, valves, and the hydrant base. All fittings must be Mega-lugged and dry blocked using solid concrete blocks.

8. Water Service

Price per each to install water service from the proposed water main. Price to include all sawcutting, excavation, tapping the main, piping, fittings, backfill, and restoration. Price to include installing a appropriate sized Mueller #H-15000, or approved equal, corporation stop on the water main, Type K copper piping placed level with the top of the water main to tie in to the water meter. Price to include all materials, labor, and equipment.

9. Asphalt Pavement Restoration*

Price per square yard for Class "C" asphalt pavement restoration. Price to include all sawcutting, subbase preparation, 6" of compacted 21A Select Backfill, tack, 5" inches of BM-25.0 base course bituminous concrete, or one and half times the existing asphalt thickness, whichever is greater. Asphalt to be compacted with a minimum of a four-ton roller and a smooth transition made to existing asphalt edges. Price to include placement of all temporary stone to allow traffic to pass over the roadway until pavement is placed. Price to include all materials, labor, and equipment. All asphalt restoration to have a one year warranty against settling and defects

***- Payment for trenches, MH structures, or pipeline excavations and associated pavement restorations/repairs shall be limited to a maximum of the diameter of the pipe or structure plus 4 feet, regardless of the depth of the trench.**

10. Driveway/Parking Lot Asphalt Restoration

Price per square yard for the restoration of asphalt driveways, parking lot and travel ways. Price to include all materials, labor, and equipment to replace to existing conditions, or a minimum of 8" of select backfill 21A and 2" of top course asphalt SM-2A Price to include any grading and surface preparation necessary to insure a smooth transition across the restored area. All asphalt restoration to have a one year warranty against settling and defects

11. Fine Grading, Seeding and Mulching, Restoration

Lump sum price for restoration, placing of suitable fill material, fine grading, seeding and mulching of all areas disturbed and not to receive pavement as per the section 120. Restoration includes the replacement of fencing that was removed and replaced with new posts and fabric/fencing material. Price includes all materials and labor for establishment and maintenance of grass areas per specification. All fine graded areas to be free from all rocks, dirt clods, and debris in the top three inches and hand-raked for a smooth transition to the existing grades.

Seeding shall conform to the following:

A. Lime	2 ton/acre
B. Fertilizer (15-30-15)	0.5 ton/acre
C. Seed	90 lb/acre

12. Rock Excavation

Price per cubic yard for the excavation and disposal of rock as per plans and Section 118. Rock is considered to be all material that cannot be removed with a Caterpillar Model No. 215D-LC trackhoe, or equivalent, equipped with a

120 hp flywheel and a short-tip radius rock bucket with 25,000-lbs buckets curling force. An example of rock excavation is material that is removed with the use of a Hoe Ram or Blasting. Price includes all materials, labor, and equipment required for excavation and disposal. Payment based on measurements of the rock in place. Rock excavation will be paid for the pipe plus up to three feet horizontally and down to grade plus up to one foot. **This Item to have prior approval by Engineer and measured by a Town representative or no payment will be made.**

*** Note: All blasting shall conform to VDOT Specifications 107.11 and 303.04, The Public Facilities Manual, and the 1996 BOCA National Fire Prevention Code Chapter 30.**

13. Undercut

Price per cubic yard for excavation and disposal of unsuitable material and installing and compacting Select Backfill 21A. Price to include all clearing, grubbing, excavation, disposal of unsuitable material, placement, and compaction. Price includes all materials, labor, and equipment. Payment to be based on the quantity of unsuitable material as measured in the ground. **This Item to have prior written approval by Engineer and measured by a Town representative or no payment will be made.**

14. Suitable Fill Material

Price per cubic yard to furnish and install suitable fill material. Price to include removal and disposal of unsuitable material. Price to include hauling, placement, and compaction of suitable fill material to the lines described on the Plans. Suitability of all fill materials to be determined by Town PFM, VDOT Standards, and the Engineer. Payment based on in ground, or in place, measurement. Price to include all materials, labor, and equipment. Payment to be based on the quantity of unsuitable material as measured in the ground. **This Item to have prior written approval by Engineer and measured by a Town representative or no payment will be made.**

15. Concrete Encasement

Price per linear foot for concrete encasement of existing utility lines. Price to include all clearing, grubbing, sawcutting, excavation, forming, placement of concrete, backfill, and restoration. Price to include placement of concrete as per the plans and Town PFM to include encasement of the utility three feet in each direction from the sanitary sewer crossing. All concrete to be a minimum of 3000 psi. Price to include all materials, labor, and equipment.

16. Compaction Test

Price per site for compaction test as per AASHTO T-99 and the Town PFM. Test sites to include compaction testing at one foot intervals from one foot above the pipe up to grade. Locations of test sites to be determined by the Engineer prior to construction and typically be in the roadway. Price to include all pre construction soil sampling and analysis prior to testing. Price to include all materials, equipment, and labor to complete the testing.

END OF SECTION

SECTION 111

CONSTRUCTION FACILITIES AND TEMPORARY CONTROLS

PART 1 GENERAL

1.01 PROTECTION AND SAFETY

A. Protect bench marks and existing structures, property corners, roads, and paving against damage from equipment and vehicular or foot traffic.

B. Cease operations and notify Engineer immediately if safety of adjacent structure(s) appears to be endangered. Do not resume operations until safety is restored.

C. Prevent movement, settlement or collapse of adjacent services, structures, trees, and etc. Assume liability for such movement, settlement, or collapse. Promptly repair damage at no cost to the Town.

D. Provide, erect and maintain barricades, lighting and/or guardrails as required to protect the general public, workers, and adjoining property.

E. Protect excavations by shoring, bracing, sheet piling, underpinning, or other methods, as required to prevent cave-ins or loose dirt from falling into excavations.

F. Notify Engineer of unexpected sub-surface conditions and discontinue work in area until Engineer provides notification to resume work.

G. Protect bottom of excavations and soil around and beneath foundations from frost.

H. Insure all required environmental protection devices and procedures are in place, properly maintained, and operational.

END OF SECTION

SECTION 112

TRAFFIC REGULATION

PART 1 GENERAL

A. **Prior to issuance of Notice to Proceed, the Contractor shall submit to the Engineer a proposed Traffic Control Plan and proposed Sequence of Work Plan to facilitate the improvements.**

B. Do not close or obstruct roadways without prior permission/coordination.

C. **Work on the Culpeper Street and Shirley Avenue Intersection will be completed between the hours as scheduled with the Town. The contractor will have all the tie in materials made up on top of the ground before any water service will be cut off. The water will only be cut off for up to four hours. The work will be performed as quickly as possible with all the needed materials on hand prior to any excavation. All road closings and flagging must be scheduled with the Town two weeks prior to the event.**

D. Work shall be performed in compliance with the most current version of the Virginia Work Area Protection Manual.

E. Access to the local residents' and businesses' property must be maintained at all times.

F. Conduct operations with minimum interference to public roadways.

G. Maintain designated temporary roadways and detours for vehicular traffic.

H. At the end of each workday, streets must be reopened to traffic. No trenches in the roadway will be left open overnight. Plating the roadway will not be allowed.

END OF SECTION

SECTION 113

CONTRACT CLOSEOUT

PART 1 GENERAL

1.01 REQUIREMENTS INCLUDED

A. Procedures:

1. Upon suspected completion of project, submit to Engineer Application for Final Payment.

2. Final Inspection meeting will be held at the site to determine completeness.

3. A final "punch list" of items to be completed will be prepared by Owner, Engineer, and Contractor at this meeting.

4. Complete items on punch list and notify Engineer of completeness.

5. Owner's payment of final application shall terminate the Contract except as provided for bonds and warranties for the guarantee period.

END OF SECTION

SECTION 114

CLEANING

PART 1 GENERAL

1.01 REQUIREMENTS INCLUDED

A. Clean premises daily, at the minimum, of accumulated construction debris. All streets including the surrounding side streets must be kept clean of mud and trackings from vehicles. Loose gravel and dust must be removed from the street. **A sweeper truck/equipment must be scheduled or onsite before construction can begin.**

B. Prior to final completion, thoroughly remove from premises any debris remaining from construction activities, and properly dispose. Leave premises in a clean, neat, orderly and safe condition.

END OF SECTION

SECTION 115

PROJECT RECORD DOCUMENTS

PART 1 GENERAL

1.01 REQUIREMENTS INCLUDED

A. Provide personnel to:
   1) Keep a set of Contract Drawings on the job site at all times.
   2) Revise drawings to show actual location and details of the finished work.
   3) Show locations and details of utilities uncovered by work.

B. Provide a set of “as built drawings” at job completion.

C. Submit Record Documents to Engineer at or before the final inspection meeting.

END OF SECTION

SECTION 116

SITEWORK PROCEDURES

PART 1 GENERAL

1.01 DESCRIPTION

General instructions for sitework.

1.02 SCOPE

Sitework shall include site preparation, earthwork, site improvements, and paving/surfacing.

1.03 QUALITY ASSURANCE

A. Prior to beginning work, become thoroughly familiar with site conditions and all sections of the Division.

B. Thoroughly coordinate all sections of this Division.

C. Comply with all pertinent codes and regulations.

D. Perform all required tests in accordance with section requirements.

1.04 SUBMITTALS

A. Shop drawings, product data.

B. Releases.

C. Disinfection and bacteriological reports.

D. Pressure test logs.

E. Project Record Documents.

F. Operating and maintenance data.

1.05 PERMITS

Obtain required permits from appropriate authorities before sitework begins.

1.06 DUST CONTROL

A. Use all means necessary to control dust on and near the Work, and on and near all off-site borrow areas, if such dust is caused by the Contractor's operations during performance of the work, or if resulting from the conditions in which the contractor leaves the site.

B. Thoroughly moisten all surfaces as required to prevent dust from being a nuisance to the public, neighbors, and concurrent performance of other work on the site.

1.07 MAINTAINING TRAFFIC

A. Do not close or obstruct roadways without permits.

B. Conduct operations with minimum interference to public or private roadways.

C. Maintain designated temporary roadways, and detours for vehicular traffic.

PART 2 PRODUCTS

In accordance with the provisions of the following sections.

PART 3 EXECUTION

3.01 SITE INSPECTION

Prior to all work of this division, carefully inspect the entire site and all objects designated to be removed and to be preserved.

3.02 CLARIFICATION

The drawings do not propose to show all objects existing on the site. Before commencing any work in this Division, verify with the Engineer all objects not clearly identified to be removed or to be preserved and any discrepancies not fully resolved.

3.03 PRIOR CONDITIONS INSPECTIONS

A. Prior to all work of this division, carefully inspect the installed work of all other trades and verify that all such work is complete to the point where installation may commence in accordance with the original design, all pertinent codes and regulations, and all applicable portions of the reference standards.

B. In the event of discrepancy, immediately notify the Engineer and do not proceed with installation in non-conforming areas until all identified discrepancies have been fully resolved.

3.04 PROTECTION AND SAFETY

Verify all required protection devices are in place and operational.

3.05 PREPARATION AND LAYOUT

A. Establish extent of sitework by area and elevations; designate and identify datum elevation.

B. Set required lines and levels.

C. Maintain bench marks, monuments and other reference points.

3.06 PROCEDURE

Provide sitework in accordance with lines and levels required for construction of the Work, including space for forms, bracing and shoring, foundation drainage systems, applying damp-proofing and waterproofing, and to permit inspection.

3.07 EXCESS WATER CONTROL

A. Do not place, spread, or roll fill material during unfavorable weather conditions. Do not resume operations until moisture content and fill density are satisfactory.

B. Provide berms or channels to prevent run-off into subgrade; promptly remove all water collecting in depressions.

C. Provide and maintain at all times during construction, ample means and devises with which to promptly remove and dispose of all water from every source entering the excavations. Dewater by means, which will ensure dry excavations and the preservation of the final lines and grades of bottoms of excavations.

3.08 SURPLUS MATERIALS

A. Remove surplus backfill materials from site, or as otherwise directed by Owner.

B. Leave stockpile areas completely free of all excess fill materials.

3.09 REMOVAL OF DEBRIS

A. Promptly remove cleared and construction debris from site.

B. Obtain permission, as required, from applicable regulatory authority for disposal of debris at waste disposal site.

C. Remove surplus equipment and tools from the site.

END OF SECTION

SECTION 117

EROSION AND SEDIMENT CONTROL

PART 1 GENERAL

1.01 SCOPE

Permanent vegetation, temporary vegetation, mulching, and conservation structures.

1.02 RELATED REQUIREMENTS

A. Section 116; Sitework Procedures

B. Virginia Erosion and Sediment Control Handbook, Latest Edition

C. Town of Warrenton Erosion & Sediment Control Ordinance.

PART 2 PRODUCTS

In accordance with the Virginia Erosion and Sediment Control Handbook and as selected by the Contractor, subject to the approval of the Engineer.

PART 3 EXECUTION

3.01 GENERAL

A. Comply with the "Virginia Erosion and Sediment Control Handbook" by the Virginia Soil and Water Conservation Commission to prevent sediment from entering storm sewers and drainageways.

B. All applicable erosion and siltation control measures shall be taken prior to grading.

C. No more than 60 feet of trench shall be open at any one time unless prior coordinated/approved.

D. Any disturbed area, not paved, sodded or built upon by November 15 is to be seeded on that date with oats, Abruzzi rye, or equivalent and mulched with hay or straw.

E. Synthetic filter fabric fencing shall be used for sediment control when the water line or land disturbing activities are within 25 feet of a live creek or stream.

F. No excavated material shall be placed in streambeds.

G. Inspect all erosion and sediment control devices at the close of each work day and after each rain storm. Make any necessary repairs or cleanup to maintain the effectiveness of the device immediately.

H. Protect graded areas from the action of the elements. Settlement or other damage that occurs prior to acceptance of the work shall be repaired and grades satisfactorily reestablished.

I. Upon completion of construction work and after spoil and debris have been removed, regrade any areas disturbed by operations.

J. No disturbed area will be denuded for more than 30 calendar days after the completion of grading. Those areas which are used for access to or from the actual construction site may remain in a denuded form so long as erosion control is properly provided to insure that there is no erosion run-off which could traverse across or out of the existing easement, which is provided to the Contractor.

K. All disturbed areas not in the streets and not used for access to or from the continuing job are to be mulched and seeded within 7 days after backfill. For those areas which are used for access, the mulch and seeding

will be required 30 days after the completion of the job or use of that area for access by the Contractor.

3.03 MULCHING

When final grading has not been completed, apply mulch asphalt emulsion, jute matting or similar materials for temporary protection. Areas brought to final grade during an off-season may be mulched immediately and overseeded at the proper season with permanent grass land legume species. Properly anchor mulch to prevent dislodging.

3.04 TEMPORARY SEDIMENT BARRIER(S)

Provide a silt fence barrier across, or at the toe of, a slope to intercept and detain sediment. See drawings for location.

3.05 OTHER APPROVED MEASURES

Provide all other materials required by governing regulations.

3.06 MAINTENANCE

Maintenance shall be as indicated on plans.

3.07 REMOVAL

Remove all control measures at the completion of the Work and restore site as required by this Division.

END OF SECTION

SECTION 118

GRADING, EXCAVATION, AND COMPACTION

PART 1 GENERAL

1.01 SCOPE

The work covered under this Section consists of furnishing all labor, equipment, and materials necessary to complete the grading and excavation called for on the plans. This includes all excavation, backfilling, and compaction required by the Contract Documents.

1.02 RELATED REQUIREMENTS

A. Virginia Department of Transportation, "Road and Bridge Specifications"

B. Virginia Erosion and Sediment Control Handbook

C. American Society for Testing Materials (ASTM)

D. Section 116; Sitework Procedures

E. Section 117; Erosion and Sediment Control

F. Section 119; Trenching, Backfilling and Compaction

PART 2 EXECUTION

2.01 EXCAVATION

A. Excavate to elevations and dimensions shown on the drawings.

B. Remove all topsoil and stockpile on site in locations indicated on drawings. All other excess material to be used in the future for engineered fill shall be stockpiled in areas shown on drawings.

C. Bidders shall base their Bids on Unclassified Excavation, except for “Rock Excavation”, to the lines and levels shown on the drawings.

D. Rock Excavation is any material that cannot be removed with A Caterpillar 215D-LC track-type hydraulic excavator, or equivalent, equipped with a 42-inch wide short-tip radius rock bucket, rated at not less than 120 hp flywheel power with bucket curling force of not less than 25,000 lbs and stick-crowd force of not less than 18,000lbs. For example, material that requires removal with a Hoe Ram or blasting is considered rock excavation. Quantity will be measured in the ground, with the width being the pipe diameter plus up to three feet and the depth to the bottom of the pipe plus up to one foot.

2.02 SHORING

A. Provide all necessary shoring, bracing, etc., as required to maintain excavations and to prevent cave-in of excavations back of all retaining walls and sufficient to resist the pressure.

2.03 FILL MATERIAL

A. Where engineered fill is specifically called for on the Drawings, fill material shall be fine grained cohesive material of low permeability. Material shall contain no rock fragments exceeding 3" in maximum dimension, shall be well graded, and shall conform generally to the following:

Passing 2" sieve.....95% minimum
Passing #200 sieve.....75% maximum

B. Before fill material is used, it shall be tested by an Independent Testing Laboratory for conformity with these requirements and for suitability for compaction. All tests shall be paid for by the Contractor. If suitable fill material is not available at the Project Site, it shall be furnished by this Contractor. All fill material shall be of similar composition.

C. All other fill material shall be well compacted earth, free of debris of all kinds.

2.04 FILLING AND BACKFILLING

A. Remove debris from excavations before backfilling. Fill shall not be placed in water or on muddy or frozen ground.

B. Engineered fill material specified above shall be installed in layers having a loose thickness of approximately 8". Layers shall be placed covering the entire area until the specified top elevation of the fill has been reached. After placing of each layer, the fill material shall be compacted to a density of not less than 95% modified proctor in accordance with ASTM D1557. The compaction of the material shall be accomplished by means of a vibratory roller, or sheepsfoot roller depending on material used. Where vibratory roller is used, no less than two passes in each direction shall be made with the vibratory roller over the entire area of each layer. Additional passes shall be made if the specified degree of compaction, as established by tests, has not been obtained.

C. The degree of compaction obtained shall be verified by means of field density tests made by an Independent Laboratory, and at no cost to the Town. Where tests indicate deficiency in degree of compaction, the Contractor shall correct such conditions and the Testing Laboratory shall make additional test in order to verify that the corrected work has been satisfactory. The Contractor shall provide four (4) certified copies of all test reports.

D. All other fill and backfill material shall be placed in layers not exceeding 8", and each layer shall be thoroughly compacted with mechanical rollers or other approved mechanical devices. Compact fill and backfill in areas inaccessible to rollers with mechanical tampers. All slopes shall be compacted:

1. Ten feet around buildings, within buildings, and within parking areas and drives shall be compacted to a density of not less than 95%.

2. Planting and lawn areas shall be compacted to a density of not less than 85%.

2.05 GRADING

A. New finish grades are shown on the Drawings. All areas where earth is disturbed by grading and construction operations under this Contract, except where paving and drives are to be constructed, shall be properly graded for seeding. The extent of grading for paving, walks, and drives shall be as shown on the Drawings.

B. Uniformly spread and rake topsoil to the levels indicated on the Drawings and to an even smooth surface ready for Seeding. Grades not otherwise indicated shall be of uniform levels or slopes between points where elevations are given. Grading around the building shall be sloped to drain away from the building in all instances.

2.06 EROSION AND SEDIMENT CONTROL

All work shall be performed in accordance with the applicable requirements of the Virginia Erosion and Sediment Control Handbook, as shown on the Drawings and required by the Town during construction.

END OF SECTION

SECTION 119

TRENCHING, BACKFILLING, AND COMPACTING

PART 1 GENERAL

The Work covered under this Section consists of furnishing all labor, equipment, and materials necessary to complete all excavation, backfilling, and compacting to trenches for pipelines and associated structures as required for work covered by these specifications.

1.01 RELATED REQUIREMENTS

Section 101; Regulatory Requirements

PART 2 PRODUCTS

INCLUDED IN PART 3

PART 3 EXECUTION

3.01 CLEARING

The sites of work shall be cleared of all trees, shrubs, paving and objectionable material which interfere with prosecution of proposed work. Trees and shrubs which will not interfere with construction shall be protected from damage. Clearing of site will be considered as an incidental item of excavation.

3.02 CLASSIFICATION OF EXCAVATED MATERIALS

All excavated materials shall be unclassified. Prices bid for the various sizes of pipe shall include excavating and backfilling.

3.03 STOCKPILING EXCAVATED MATERIAL

All excavated material shall be stockpiled in a manner that will not endanger the Work and that will prevent obstruction of driveways, gutters, and natural water courses. Hydrants under pressure, valve pit covers, valve boxes, or other utility controls shall be left unobstructed and accessible at all times. Topsoil shall be stockpiled separately to guarantee its replacement at the top of the backfill trench.

3.04 SHEETING AND SHORING

Sheeting and shoring shall be furnished in accordance with the provisions of OSHA and as necessary to construct and protect the excavation, structures of all types, and as necessary for the safety of the employees.

3.05 DEWATERING

Where conditions are such that running or standing water occurs in the trench bottom or the soil in the trench bottom displays a "quick" tendency, the water should be removed by pumps and suitable means such as well points or pervious underdrain bedding until the pipe has been installed and the backfill has been placed to a sufficient height to prevent pipe flotation.

3.06 HIGHWAY RIGHTS-OF-WAY

Work within existing or proposed Town Rights-of-Way shall meet all requirements of the Town's Department of Public Works.

3.07 MATERIAL

A. Select Material:

Backfilling shall normally be done with the earth removed from the trench or excavation, provided that the

excavated material is suitable for backfilling. Suitable material for select backfill shall be construed as material that classifies as select material Type I or II according to Section 208 of the VDOT Road and Bridge Specifications. No material other than select backfill shall be used for backfilling until the pipe or other structure has one foot or more cover, unless otherwise specified. Above that, except for the last two feet, small stones not larger than 6 inches in their greatest dimension, will be permitted in an amount not in excess of 20 percent of the volume of backfill material, and such stones shall be well distributed throughout the mass.

B. Unsuitable Material:

Material such as clay mass, frozen materials, cinders, ashes, refuse, and vegetable or organic material shall be construed as unsuitable material for backfill.

C. Approved Granular Material:

Granular material shall be well graded crushed stone meeting the requirements of Gradation 57 or 68 as specified in Section 203 of the VDOT Road and Bridge Specifications.

3.08 EXCAVATION FOR TRENCHES

A. General

All excavation for trenches shall conform to the lines and grades shown on the approved drawings. Excavated material shall be removed and used for backfilling where suitable.

B. Ductile Iron and PVC Pipe

The trench shall be excavated to a level below the established pipe grade in accordance with the requirements for bedding as specified below. Bell holes shall be provided at each joint to permit proper joint assembly and pipe support. Any part of the trench bottom that is excavated below the required level shall be backfilled with approved granular material and compacted to a minimum 95 percent of maximum density as determined by AASHTO T-99.

3.09 TRENCH WIDTH

Trench width at the ground surface may vary with and depend upon depth, type of soils, and position of surface structures. The minimum clear width of the trench, sheeted or unsheeted, measured at the springline of the pipe should be one foot greater than the outside diameter of the pipe. **The maximum clear width of the trench at the top of the pipe should not exceed a width equal to the outside pipe diameter plus three (3) feet.** If the above defined trench width must be exceeded or if the pipe is installed in a compacted embankment, pipe embankment should be compacted to a point of at least 2.5 pipe diameters from the pipe on both sides of the pipe or the trench walls, whichever is less. Excavation at manholes and similar structures shall be sufficient to provide 12 inches in the clear between the outside of the structure and the embankment or sheeting.

3.10 UNSUITABLE SUBGRADE

When an unstable foundation is encountered which will not provide adequate pipe support, additional trench depth shall be excavated to a stable foundation and backfilled with approved granular material.

3.11 BEDDING

Ductile Iron Pipe shall be laid in a flat bottom trench on undisturbed earth. If rock is encountered at the bottom of the trench, bedding shall be a minimum of eight inches approved granular material in accordance with above.

3.12 BACKFILLING TRENCHES

A. General:

All trenches shall be backfilled immediately after the pipes and appurtenances are laid therein, with the exception of pressure pipe, where joints are to remain uncovered until after pressure testing is completed. The equipment used for compaction of backfill shall be subject to approval by the Engineer.

B. Initial Backfill:

Initial backfill shall begin at the bottom of the trench to the centerline of the pipe and shall be placed in 3-inch layers and compacted by hand or by approved mechanical tampers or other approved means**. No roller on the back of a bucket will be allowed for compaction. Compaction must be performed with a "jumping-jack" style compactor or vibratory roller with sheepsfoot roller.** Backfilling material shall be deposited in the trench for its full width on each side of the pipe, fittings, and appurtenances to a level of at least one foot above the crown of the pipe, the trench shall be backfilled by hand in 6-inch layers and thoroughly compacted, using special care to avoid injuring or moving the pipe, or damaging any coatings on the pipe. Initial backfill shall be compacted to a minimum 95 percent of maximum density as determined by AASHTO T-99. No lumps greater than two inches in diameter shall be allowed in initial backfill material.

C. Final Backfill:

1. General:

Backfill for trenches not subjected to vehicular traffic shall be placed in layers no greater than one foot thick and compacted to at least 85 percent maximum density as determined by AASHTO T-99. Topsoil (in grassed areas) shall be deposited in the final layer of backfill to guarantee the areas will be returned to original or better conditions.

2. Roadways:

Backfill in and along roadways shall be placed in layers no greater than six inches and compacted to at least 95 percent maximum density as determined by AASHTO T-99.

3.13 COMPACTION TESTS

The Contractor shall employ a reputable testing laboratory at the Contractor's expense, approved by the Engineer. Compaction tests for sewer and water lines are to be taken as follows in and along roadways: (95%)

A. A minimum of one between each manhole section one foot above the sewer line, or every 100 foot distance between manholes; whichever is the greater number of compaction tests needed. For water line construction, a minimum of every 100 feet one foot above the water line.

B. A minimum of one compaction test between each manhole section at the final aggregate base 9 inches below the final bituminous surface course finished elevation or every 100 foot distance between manholes; whichever is the greater number of compaction tests needed. For water line construction, a minimum of every 100 feet at the final aggregate base 9 inches below the final bituminous surface course finished elevation.

C. A minimum of one compaction test at final grade area under each manhole base unit.

3.13 RESTORATION

A. Pavement Replacement:

Existing pavement which has been cut, damaged, or removed during construction shall be replaced in accordance with the VDOT Road and Bridge Specifications and highway permit.

B. Finished Grading and Clean Up:

Where possible, the ground surface shall be left rounded and slightly higher than the surrounding ground to

allow for future settlement. Finished areas around structures shall be graded smooth and hand raked and shall meet the elevations and contours as shown on the Drawings. All lumber, earth clods or rocks larger than four inches and other undesirable materials shall be removed from the site at the completion of construction. Clean up shall be done as promptly as practicable and shall not be left until the end of the construction period.

C. Keep the area of Work cleaned up at all times and promptly remove all materials and debris not intended for incorporation in the Work. Broom clean the surfaces of all paved areas immediately after backfilling operations.

D. Maintain backfilled trenches from the nuisance of dust, mud or settling during the entire length of the Contract and for a period of one year following Final Acceptance of the Work

E. In the event the Contractor fails to satisfy these requirements to the satisfaction of the Engineer, or otherwise prosecute the Work in a reasonable or proper manner, and after a reasonable period of time has elapsed after notification by the Engineer of unsatisfactory conditions, the Owner reserves the right to employ services to take such corrective action as deemed necessary by the Engineer. The cost incurred in taking corrective actions will be deducted from any monies due the Contractor by the Owner or such other means of collection as may be available to the Owner.

F. Shoulder stone may be required by the Town on a case by case basis. Shoulder stone shall be placed at all driveways (if no paved), and mailboxes. Stone shall be placed for a distance of twenty (20) feet centered on the mailbox.

G. All paved and graveled parking areas and paved roads disturbed during the construction shall be repaired within one (1) week of the installation and backfill of the sewer lines and/or service line/laterals.

END OF SECTION

SECTION 120

FINISH GRADING

PART 1 GENERAL

1.01 SCOPE

Spreading of topsoil to finish grade.

1.02 RELATED REQUIREMENTS

Section 116; Sitework Procedures

1.03 SUBMITTALS

Certification by a registered Civil Engineer or Certified Land Surveyor that the general grading has been completed and the resulting grade elevations are in substantial conformity with the Plans and Specifications.

PART 2 MATERIALS

Topsoil shall be reasonably free from subsoil, debris, stones, and gravel. In the event there is insufficient topsoil on site, the contractor may use other types of soil deemed adequate by the Engineer for seed germination. All soil to be hand raked to remove all roots, dirt clods and rocks in the top three inches.

PART 3 EXECUTION

3.01 FINISH

The surface of the topsoil shall be even and free from irregularities and have proper drainage. All areas are to be hand raked to remove all dirt clods, gravel, stones, woody debris, roots, and other similar materials from the top three inches. All hay bale strings are to be removed from the graded area after mulching.

3.02 EXCESS

Excess topsoil shall be removed from the site or stored on site as directed by Town.

END OF SECTION

SECTION 121

PAVEMENT RESTORATION

PART 1 GENERAL

The work covered under this section consists of furnishing all labor, equipment, and materials necessary to perform all required paving and pavement patching required by the Contract Documents.

1.01 RELATED REQUIREMENTS

A. Section 119; Trenching, Backfilling and Compacting

B. Section 122; Street Construction

1.02 REFERENCE SPECIFICATIONS

Reference specifications, where applicable to work under this Section, are referred to by abbreviation as follows:

A. American Association of State Highway & Transportation Official - AASHTO

B. Virginia Department of Transportation - VDOT.

1.03 PERMITS

All work will be in accordance with a Virginia Department of Transportation Highway Construction Permit obtained by the Owner.

PART 2 PRODUCTS

2.01 BASE AGGREGATE:

Base Course Aggregate shall be Type 1, Graded Aggregate Base Material as defined in Section 209, Subbase and Aggregate Base Material, of the VDOT Specifications. Aggregate size shall be 21A.

2.02 CONCRETE

Concrete shall be in accordance with VDOT Road and Bridge Specifications.

2.03 PRIME COAT

Prime Coat shall be Grade RC-250 Bituminous Material as defined in Section 211, Bituminous Material, of the VDOT Specifications. Application rate shall be 0.35 gal/sq. yd.

2.04 TACK COAT

Tack Coat shall be emulsified Asphalt RS-1, meeting requirements of AASHTO —140. Application rate shall be 0.07 gal/sq. yd.

2.05 BITUMINOUS BASE COARSE

Bituminous Base shall be Type BM-25.0 Bituminous Concrete as defined in Section 212, Bituminous Concrete, of the VDOT Specifications.

2.06 BITUMINOUS SURFACE COARSE

Bituminous Surface shall be Type SM-9.5A Bituminous Concrete as defined in Section 212, Bituminous Concrete, of the VDOT Specifications.

2.07 BITUMINOUS SURFACE TREATMENT

A. Prime Coat. Cut-back asphalt CRS-2 meeting the requirements of AASHTO M81. Application rate shall be 0.35 gal/sq. yd.

B. Prime Coat Cover Aggregate. VDOT No. 78 or No. 8 Stone. Application shall be 30 lbs/sq. yd.

C. Seal Coat. Cut-back Asphalt CRS-2 meeting the requirements of AASHTO M81. Application rate shall be 0.25 gal/sq. yd.

D. Seal Coat Cover Aggregate. VDOT No 78 or No. 8 Stone. Application shall be 25 lbs/sq. yd.

2.08 CRUSHER RUN AGGREGATE

Crusher Run Aggregate shall be VDOT No. 26 as defined in Section 206, Crusher Run Aggregate, of the VDOT Specifications.

2.09 COURSE AGGREGATE

Course Aggregate shall be VDOT No. 1 Stone as defined in Section 203, Course Aggregate, of the VDOT Specifications.

PART 3 EXECUTION

3.01 RESTORATION OF PAVEMENT

A. All existing pavement disturbed by the installation of the work shall be restored as hereinafter specified. Materials and methods of construction shall conform to the most current version of the applicable provisions of the Virginia Department of Highways and Transportation Road and Bridge Specifications. Pavement which shows signs of failure or other defects after completion of restoration shall be removed and replaced by the Contractor at his own expense.

B. When pavement, curb and gutter or sidewalks must be cut, make the cut (saw cut only) in a smooth straight line, parallel to the pipe and 12 inches wider than trench, on each side, to provide an undisturbed shoulder under the new work.

C. Where trenches cross streets, unless specified elsewhere to the contrary, disturb no more than one-half of the street width at one time, and restore the first opening to satisfactory travelable condition before the second half is excavated. Avoid placement of excavated material on existing pavement whenever possible. Clean the pavement by an approved method. Use no cleated equipment on pavements. Alter normal traffic flow only as allowed under Engineer permission and the Approved Traffic Plan.

D. Do not block private entrances except for short periods, and maintain ingress and egress to adjacent property.

E. Do not clog street drainage. Maintain shoulders, gutters and ditches affected by trenching operations to carry drainage flows.

F. Prepare subgrade by grading and compacting immediately prior to placing the Aggregate Base Course. The surface shall be true to line and grade and shall be checked with suitable templates or other approved method. Construction methods and equipment shall meet requirements of applicable portions of Section 305, Subgrade and Shoulders, of the VDOT Specifications.

G. Where trenches have been opened in any roadway or street that is part of the State of Virginia highway system, the pavement shall be restored in accordance with the requirements of the Virginia Department of Highways and Transportation, except that in no case shall the paving restoration be less than required for Class "B" Restoration below.

H. Where trenches have been opened in any roadway or street other than those that are part of the State of Virginia Highway System, the pavement shall be restored by one of the following classes of restoration as directed by the Engineer.

1. Class "A" Restoration: The existing paved surface shall be cut (saw cut only) vertically and horizontally in a smooth straight line to present a neat appearance leaving at least one foot shoulder of undisturbed aggregate base course. The paved surface shall be removed and all saw cut edges shall be tacked with CRS-2 or RC-250 Asphalt Materials or approved equal. The application of the tack shall be under the direction of the Town Engineer or his authorized representative. The trench shall be backfilled as specified and the top of the trench shall be filled with 12-inch aggregate base course (compacted to 95 percent by AASHTO Standard T-99) of 21A Select Backfill, or approved equal, and six inches, 6", of BM-25.0 Bituminous base course, and two inches, 2", of SM-9.5A Bituminous top course to bring the level to the top of the existing pavement, or match existing pavement , whichever is greater.

2. Class "B" Restoration: The existing paved surface shall be cut (saw cut only) vertically and horizontally in a smooth straight line to present a neat appearance. The paved surface shall be removed and all saw cut edges shall be tacked with CRS-2 or RC-250 Asphalt Materials or approved equal. The application of the tack shall be under the direction of the Town Engineer or his authorized representative. The trench shall be backfilled as specified and the top of the trench shall be filled with six inches, 6", of aggregate base course (compacted to 95 percent by AASHTO Standard T-99) of 21A or approved equal, four inches, 4", of BM-25.0 Bituminous base course, and two inches, 2", of SM9.5A top course bituminous concrete to bring the level to the top of the existing pavement. This paving shall be smoothly transitioned to the existing asphalt grades.

3. Class "C" Restoration: The existing paved surface shall be cut (saw cut only) vertically and horizontally in a smooth straight line to present a neat appearance. The paved surface shall be removed and all saw cut edges shall be tacked with CRS-2 or RC-250 Asphalt Materials or approved equal. The application of the tack shall be under the direction of the Town Engineer or his authorized representative. The trench shall be backfilled as specified and the top of the trench shall be filled with six inches, 6", of compacted aggregate base course 21A, or approved equal, and five inches, 5", of BM-25.0 Bituminous base course, or one and a half times the existing asphalt thickness, whichever is thicker, to bring the level to the top of the existing pavement. Along gutter pans or concrete curbing the asphalt grade will be left one inch low to allow for overlay. This paving shall be smoothly transitioned to the existing asphalt grades.

I. Where the surface of the existing pavement of any street, road, or alley is damaged outside the trench area by the Contractor during construction, as determined by the Engineer, the Contractor shall restore the damaged pavement (either Class "A","B", or "C" restoration as directed by the Town Engineer) at no cost to the Town.

J. Time Frame for Restoration: All Class "A" shall be completed the same day of excavation unless approved otherwise by the Town Engineer.

K. All asphalt compaction to be performed with at least a four ton vibratory roller. No plate compactors will be allowed. Compaction must meet the most current method of VDOT Specifications and Standards.

3.02 MAINTENANCE OF RESTORED PAVEMENT

The Contractor shall maintain, at his own expense, all refilled excavations and restored pavement in proper condition until the end of the one-year period following the date of final acceptance of the work. All depressions appearing shall be properly refilled, brought to grade and pavement restored. If the Contractor shall fail to do so within two weeks time after the receipt of written notice from the Engineer, the Engineer may refill and restore said depressions and the cost thereof shall be charged to the Contractor. In case of emergency, the Owner may refill and restore any dangerous depressions without giving previous notice to the Contractor and the cost of do doing shall be charged to the Contractor.

3.03 RESTORATION OF PRIVATE ENTRANCES

Restore private entrances to the original condition, or provide no less than 8 inches of select backfill 21A and two inches of SM-9.5A Top course bituminous concrete, whichever condition is better.

3.04 RESTORATION OF CONCRETE CURBS

Restore concrete curbs, gutters, sidewalks, paved ditches and driveways disturbed by construction to the original condition. Restoration shall be done in full sections. Patching or piecing of sections will not be permitted.

3.05 RESTORATION OF BRICK OR COBBLE PAVEMENTS

Brick, cobble or other types of pavement shall be restored to match the existing pavement.

3.06 RESTORATION OF UNPAVED ROADS

All unpaved roads or traveled rights-of way shall be restored with a 12 inch minimum soil aggregate surface course, Gradation "C", properly compacted and bonded.

3.07 PAVEMENT MARKING

Traffic and lane marking will be painted or repainted by the Owner.

3.08 GENERAL

A. Upon completion of construction work and after spoils and debris have been removed. Regrade any areas disturbed by operations.

B. The Contractor shall be responsible for any injury or damage that may result from improper maintenance of any refilled excavations at any time previous to the end of the above-mentioned one-year period.

END OF SECTION

SECTION 122

STREET CONSTRUCTION

PART 1 GENERAL

The work includes providing all clearing and grubbing, excavation and embankment, grading and preparing subgrade, aggregate base course, bituminous base and surface courses, curb and gutter, walks, entrances, seeding, sodding and other incidental work required for roadway construction.

1.01 RELATED REQUIREMENTS

A. Section 119; Trenching, Backfilling and Compacting

B. Section 121; Pavement Restoration

1.02 REFERENCE SPECIFICATIONS

Reference specifications, where applicable to work under this Section, are referred to by abbreviation as follows:

A. American Association of State Highway & Transportation Officials - AASHTO

B. Virginia Department of Transportation - VDOT

1.03 PERMITS

All work will be in accordance with a Virginia Department of Transportation Highway Construction Permit obtained by the Owner.

PART 2 EXECUTION

2.01 MATERIALS AND CONSTRUCTION METHODS

A. All materials and construction shall be in accordance with the Virginia Department of Highways and Transportation, Road and Bridge Specifications and the Virginia Department of Highways and Transportation, Road Designs and Standards except as modified by the Town of Warrenton Standards or the Contract Drawings and Specifications.

B. The right-of-way must be fully cleared, all utilities must be in place, the roadway must be graded to the proposed typical section and all compacting requirements must be met prior to the application of any paving materials.

C. All unpaved areas within the right-of-way limits and/or limits of work shall be top soiled and seeded final acceptance will not occur until a proper growth of grass has been established.

D. Curb cut ramp (handicap ramp) shall be constructed in accordance with Standard CG-12 of the Virginia Department of Highways and Transportation, Road and Bridge Standards.

2.02 INSPECTION AND TESTING

A. Only materials meeting the requirements of these specifications shall be used. They may be subjected to preparation or use and each of the materials shall be subject to approval by the Engineer at the source of supply or upon delivery, as applicable. Any work in which untested materials are used without approval may be considered as unacceptable and the work may be disapproved by the Engineer.

B. The Contractor shall employ a reputable Testing Laboratory approved by the Owner to perform the tests herein specified and to certify the results of the tests. Samples for testing shall be furnished by the

Contractor at his expense and will be taken as directed by the testing laboratory, the Owner, or the Engineer.

C. The following Schedule of Tests shall be followed unless modified by the Engineer.

MATERIAL	TYPE OF TESTS	NO. REQUIRED
Subgrade	AASHTO Maximum Density T-99 Method A	1-each type material
		Field Density ASTM D2167 1 per 2000 s.y.
Subgrade	California Bearing Ratio (CBR) VTM-8	2 per project
Aggregate Base	AASHTO Maximum Density T-99-Method A	1 per job
	Field Density ASTM D2167	1 per 2000 s.y.
Bituminous		AASHTO Maximum Density T-99
		1 per job
Concrete	Field Density ASTM D2167	1 per 2000 s.y.
Portland		Slump
		1 each truck
Cement		Concrete cylinders
		as directed
Concrete		

LOCATION	TYPE OF TEST	NO. REQUIRED
Final grade area under each structure unit	AASHTO Maximum Density T-99 Method A Field Density ASTM D2167	1 per structure minimum
Final grade area under each structure unit	AASHTO Maximum Density T-99 Method A Field Density ASTM D2167	1 per 100 LF minimum
Final grade area under	AASHTO Maximum Density T-99 Method A	1 per 100 LF
		Field Density ASTM D2167
		minimum
storm culverts		

END OF SECTION

SECTION 124

MANHOLES

PART 1 GENERAL

1.01 RELATED REQUIREMENTS

A. Section 102; Lines and Grades

B. Section 108; Shop Drawings, Product Data

A. Section 119; Trenching, Backfilling & Compacting

1.02 QUALITY ASSURANCE

Comply with all applicable codes and regulations as required by regulatory agencies having jurisdiction over this Work. Comply with the pertinent sections of the following standards:

A. ASTM - American Society of Testing and Materials

B. AASHTO - American Association of State Highway and Transportation Officials

C. ACI - American Concrete Institute

1.03 SUBMITTALS

Shop drawings and product data for manholes and cleanouts, and related accessories.

PART 2 PRODUCTS

2.01 MANHOLES

A. General:

Manholes shall be constructed of pre-cast concrete with cast iron frames and covers as shown on the contract drawings. Pre-cast manholes shall conform to ASTM C478. Base sections shall be pre-cast and shall be of the "tub" type that extends above the top of the pipe. Base sections and risers shall be furnished for installation with bell end up.

Pre-cast manholes shall be manufactured by Virginia Pre-cast Corp., Gray Concrete Pipe Co., or approved equal. A flexible, all-weather joint sealant such as M-30, Flex-Tyte Butyl by Delta Pipe Products or approved equal, thickness to be recommended by manufacturer is to be used between all manhole joints, manhole frames and tops of frames. All reinforcing steel shall conform to ASTM C443 or C361. Manholes shall be provided with galvanized iron, rubber-coated steps which shall be constructed in accordance with Standard ST-1 of the Virginia Department of Highways and Transportation, Road and Bridge Standards.

B. Types of Manholes:

Manholes shall be of three types and construction shall be as indicated on the contract drawings. A shallow type manhole shall be constructed at all locations shown where the depth of the invert of the lowest line to grade does not exceed four feet.

Standard type manholes shall be constructed where invert of lowest line is 4 feet or greater to grade line. Construction shall be as shown on contract drawings.

C. Manhole Frames and Covers:

Manhole frames and covers shall be in accordance with requirements shown on the drawings. They shall conform to the current ASTM A-48, Class 30A, 30B, or 30C and shall be of such quality and composition to make the metal of the casting strong, tough and of even grain. Frames and covers shall be smooth, free from scale, lumps, blisters and sand holes and shall be factory coated with asphalt varnish and shall be constructed in accordance to Drawing S-5 of the Town's PFM. No plugging or filling will be allowed. The word **"SANITARY SEWER"** shall be cast in the cover of all sanitary lids so as to be plainly visible. The word **"STORM SEWER"** shall be cast in the cover of all storm lids so as to be plainly visible. The manhole frames and covers shall be set so that the top of the cover will be flush with the finished grade. Combined weight of manhole frame and cover shall not be less than 400 pounds. Frames and covers shall have the bearing surfaces machine to prevent rocking. Standard Manhole frames and covers shall be Neenah Standard Catalog number R-1401-A, or equal. Watertight manhole frames and covers shall be Neenah standard catalog number R-1755-C, or equal.

D. Invert Channels:

Invert channels shall be smooth and semi-circular in shape, conforming to the inside of the adjacent sewer section. Changes in direction of flow shall be made with a smooth curve of as large a radius as the size of the manhole will permit. The invert channels in cast-in-place bases shall be formed directly in the concrete of the base or shall be built up with brick and mortar or grout. The invert channels in pre-cast bases shall be formed with grout or brick and mortar. The floor of the manhole, outside of the channels, is not to be less than one inch per foot nor more than two inches per foot.

END OF SECTION

SECTION 130

SANITARY SEWER SPECIFICATIONS

PART 1 SCOPE OF WORK

The work includes providing all piping, manholes and other appurtenances required for a complete sanitary sewer system.

1.01 MATERIALS:

A. All type and class of pipe shall be indicated on the project plans.

B. Polyvinyl Chlorine pipe (SDR 35 or schedule 40) for house sewer shall conform to ASTM D 3034 as modified herein. Joints shall be elastomeric gasket joints resulting in watertight seals.

C. Pre-cast concrete manhole sections shall conform to ASTM Specification C478. Joints shall be made with O-ring type rubber gaskets conforming to ASTM Specification C443 or C361.

D. Pre-cast concrete segmental blocks shall conform to ASTM Specification C139. Cement used in the manufacture of the blocks shall conform to ASTM Specification C150, type II. Blocks shall be not less than five inches (5") wide and eight inches (8") long, or proper radius and shaped for sealing and bonding joints with mortar.

E. Mortar shall be one part of portland cement conforming to ASTM Specification C150, Type II, and two (2) parts of said conforming to ASTM Specification C144, with enough water added to produce mortar of the proper consistency for the type of joint. For brickwork, lime may be added to the mortar in the amount of not more than twenty-five percent (25%) of the volume of cement.

F. Grout shall conform to the requirements specified for mortar except that the proportion shall be one part of portland cement and three parts of sand.

G. Cast iron manhole frames and covers and cast iron steps shall conform to ASTM Specification A48, Class 30A, 30B or 30C and shall be factory coated with asphalt varnish.

H. Polyvinyl chloride pipe and fittings four inches (4") through fifteen inches (15") in diameter shall meet the requirements of ASTM D 3034 as modified herein.

1. Pipe with blisters, bubbles, cuts or scrapes on inside or outside surfaces, which appreciably damage the wall thickness, or other imperfections which impair the performance or life of the pipe will be rejected.

2. Joints shall be elastomeric gasket joints resulting in watertight seals.

1.02 FACTORY TESTS:

A. Pipe proposed for use shall be factory-tested in accordance with the requirements of the applicable Specification referenced hereinbefore for the pipe.

B. The Contractor shall furnish sworn statements from the pipe manufacturers that the inspection and tests specified in the referenced standards, including basic tests required by the standard and option tests as specified herein, have been made and that the results of such inspections and tests comply with the requirements of the applicable standard. In addition, actual test results shall be submitted to the Engineer as directed. No pipe shall be considered for use on the project until the manufacturer's certification, and test results when required, have been approved by the Engineer.

1.03 LAYING PIPE:

A. Pipe shall be laid to a true uniform line and grade from elevations indicated or as directed. Such grades and elevations shall indicate the position of the invert of the pipe. Not less than three (3) batter boards, or their

equivalent, shall be maintained between any two (2) manholes at all times during the pipe laying operations. All work shall be done in strict accordance with the recommendations of the manufacturer of the pipe.

B. Pipe laying shall proceed up-grade with the spigot ends pointing in the direction of flow. Each section of pipe shall be laid in such a manner as to form a close concentric joint with the adjoining sections and to prevent sudden offsets in the flow line. Each section of pipe, as it is laid, shall be backfilled sufficiently to hold it firmly in place.

C. As the work progresses, the interior of the sewer shall be cleared of all dirt and superfluous materials of every description. Where cleaning after laying is difficult because of small pipe size, a suitable swab or drag shall be kept in the pipe and pulled forward past each joint immediately after the jointing has been completed.

D. All trenches and other excavations shall be kept free of water during construction and until final inspection. No pipe shall be laid in water, nor shall water be allowed to rise over the pipe joints until the joints are tight. It is not intended by this stipulation that a dry trench will be required, but it is intended that water which might in any way have a harmful effect on the joint shall be excluded from the excavations.

E. At times when work is not in progress, open ends of pipe and fittings shall be securely closed with approved plugs or caps to prevent trench water, earth or other substances from entering the pipes or fittings.

F. All pipe and fittings shall be handled with care at all times to avoid damage. All such materials shall be carefully inspected for defects before being lowered into the trench.

G. All pipe in areas of fill shall not be laid in areas of fill until grading is complete unless the depth of cover is at least 12" below existing ground line for ductile iron pipe and 36" below existing ground line for pipes of other materials.

1.04 JOINTING:

A. General: The Contractor shall obtain the field services of experienced and qualified representatives of the manufacturer whose products are approved for the work to instruct the Contractor's personnel in the proper jointing procedure to be used to secure the best possible joints with the materials selected. The pipe manufacturer shall furnish the contractor and the Engineer a suitable manual covering the recommended procedure for pipe jointing.

B. Joints shall be installed in strict accordance with the recommendations of the pipe manufacturer.

C. Joints between any nonmetallic sewer pipe and cast iron pipe, and between new and existing lines shall provide a tight connection and shall be made with standard adapters or other approved methods.

1.05 CONNECTIONS TO EXISTING MANHOLES:

Pipe connections to existing manholes shall be made by core drill opening in such a manner that the finished work will conform as nearly as practicable to the essential applicable requirements for new manholes, including all necessary concrete work, cutting, shaping and rechanneling. The connection of the sewer line into the manhole is to be made by a press seal gasket.

1.06 MANHOLES:

Manholes shall conform to Section 302.09 of the Town's PFM.

1.07 TESTING AND LATERAL CONNECTIONS FOR SEWERS

All connections and testing of sewer mains shall conform to applicable sections under Section 302 of the Town's PFM.

END OF SECTION

SECTION 135

SANITARY SEWER BYPASS PUMP SPECIFICATIONS

PART 1 GENERAL

1.01 RELATED REQUIREMENTS

A. Section 102; Lines and Grades

B. Section 108; Shop Drawings, Product Data

A. Section 119; Trenching, Backfilling & Compacting

1.02 QUALITY ASSURANCE

Comply with all applicable codes and regulations as required by regulatory agencies having jurisdiction over this Work. Comply with the pertinent sections of the following standards:

A. ASTM - American Society of Testing and Materials

B. AASHTO - American Association of State Highway and Transportation Officials

C. ACI - American Concrete Institute

D. Department of Health, Commonwealth of Virginia, "Waterworks Regulations", and “Sewerage Regulations.”

1.03 SUBMITTALS

Sequence of bypass pumping and related traffic control plan.

PART 2 PRODUCTS

2.01 PUMPING SYSTEM

A. The Contractor shall provide and maintain adequate bypass pumping equipment, force mains and other necessary appurtenances in order to maintain reliable sanitary sewer service of a minimum capacity of 5 million gallons per day (MGD) in all sanitary sewer lines as required for construction.

B. All piping(s), joints and accessories shall be designed to withstand at least twice the maximum system pressure or a minimum of 50 PSI whichever is greater.

C. The Contractor shall have backup pump(s), force main(s), power supply and appurtenances ready to deploy immediately. The Town shall approve appurtenances and discharge point. Any backups and /or overflows as the result of inadequate equipment are the responsibility of the Contractor.

D. The Contractor shall demonstrate that the pumping system is in good working order and is sufficiently sized to successfully handle a minimum capacity of 5 MGD by performing a test run for a period of 24 hours prior to beginning the work.

PART 3 EXECUTION

3.01 PRE-CONSTRUCTION

A. The Contractor will be required to provide a written sequence of bypass pumping plans for review and approval by the Town. The Contractor shall also provide a sketch showing the location of bypass pumping

equipment for each line segment(s) around which flows are being bypassed. All plans and sketches shall be submitted for approval a minimum of seven days in advance of the intended bypass pumping operation.

B. Prior to implementing the temporary bypass pumping system, the Contractor shall provide a written request to the Town for approval. The request needs to clearly state the work area, temporary pumping duration and anticipated start and end date of the construction. The Town reserves the right to modify of reschedule the diversion as required to meet the needs of the system users.

C. The Contractor shall be required to have all materials, equipment and labor necessary to complete the repair or replacement on the job site prior to isolating the sewer manhole or line segment and beginning bypass pumping operations. The Contractor shall be responsible for all required bulkheads, pumping equipment piping, etc., to accomplish the sequence of pumping.

D. The Contractor shall maintain a portable generator as required to ensure continuous power to the pumping units.

E. The Contractor shall provide bypass pumping of sewage around each segment(s) of pipe or structures that is to be replaced or altered, from the Waste Water Plant Head Works to Manhole F.

3.02 BYPASS PUMPING OPERATIONS

A. Bypass Piping

1. The Contractor shall locate bypass pumping suction and discharge lines so as not to cause undue interference with the use of streets, private driveways and alleys.

2. In cases where the suction and or discharge lines are required to be buried for vehicle and pedestrian traffic, cost for this work is incidental and includes complete restorations of any surface features disturbed. An alternate is to use drivable flow-through ramp sections of discharge pipe.

3. Force Main piping may be laid inside of storm drainage pipes to avoid surface interference with vehicular or pedestrian traffic. Flows shall not be allowed to spill from said force mains into said drainage pipes. The Town shall approve the use of existing storm drain systems. Force mains laid in storm sewers shall be pressure pipe and fittings.

B. During bypass pumping, no sewage shall be leaked, dumped, or spilled in or onto any area outside of the existing sanitary sewer system. When bypass pumping operations are complete, all pumping shall be drained into the sanitary sewer prior to disassembly.

C. The Contractor shall plug off and pump down the sewer manhole or line segment in the immediate work area and shall maintain the sanitary sewer system so that surcharging does not occur.

D. Where work requires the line to be blocked beyond working hours, Contractor shall operate the bypass pumping system including the temporary power supply and man the system twenty –four (24) hours a day. Maintenance to include periodic checks of the system during night time hours and designated emergency personnel should a problem arise in the evening hours.

E. The Contractor shall complete the work as quickly as possible and satisfactorily pass all tests, inspections and repair all deficiencies prior to discontinuing bypass pumping operations and returning flow to the sewer manhole or line segment.

F. The Contractor shall cease bypass pumping operations and return flows to the new and/or existing sewer when approved by the Town.

G. The Contractor shall ensure that no damage will be caused to private property as a result of bypass pumping operations. Ingress to adjacent properties shall be maintained at all times. Ramps, steel plates or other methods shall be deployed by the Contractor to facilitate over surface piping. High traffic commercial properties may require alternate methods.

3.03 SEWAGE OVERFLOW

A. The Contractor shall immediately notify the Town should a surcharge occur that results in an overflow of sewage. If the Contractor is unable to remedy the situation, then he shall suspend or terminate the work until such time as the overflows have been controlled. Should such surcharge damage the materials and/or equipment that is used on the job and/or adjacent property, it shall be corrected at no additional cost the Town.

B. In the event that sewage accidentally drains into the drainage system or street, the Contractor shall immediately stop the overflow, notify the Town, and take the necessary action to clean up and disinfect the spillage to the satisfaction of the Town. If sewage is spilled onto public or private property, the Contractor shall wash down, clean up and disinfect the spillage to the satisfaction of the Engineer.

END OF SECTION

SECTION 140

WATER MAIN SPECIFICATIONS

PART 1 SCOPE OF WORK:

The work includes providing all piping, fittings, valves, valve boxes, hydrants, anchorage, and all other appurtenances required for a complete water distribution system.

1.01 MATERIALS:

A. All materials shall be suitable for one hundred and fifty pounds per square inch (150 psi) water working pressure unless indicated otherwise.

B. Ductile iron pipe shall conform to AWWA Standard Class 52. Ductile iron fittings shall conform to AWWA Standard C110. Pipe and fitting shall be cement line and shall have mechanical joints or push-on joints conforming to AWWA Standard C111.

C. Class of Pipe: The minimum thickness of ductile iron pipe shall be Class 52 in accordance with AWWA Standard H1 or H3.

D. GATE VALVES: Valves shall be cast iron body, resilient seated with reinforced rubber seat ring or permanently bonded disc, and machined seating surface, brass or bronze non-rising stems, and complying with AWWA C.509. Body shall be self-centering or shall have guides for alignment of wedge disc and have internal epoxy coating approved for potable water. Working pressure shall be at least two hundred pounds per square inch (200 psi) for valves twelve inches (12") in diameter and smaller. Valves shall have "O" ring seals and shall open left (counter clockwise) with a two-inch (2") square wrench nut. Valve ends shall be of mechanical joint type with all bolts, glands, and rubber gaskets furnished in the price of the valve. Valves shall be equal to Mueller or equal gate valves as manufactured by Kennedy or Clow. Valves smaller than four inches (4") shall have screw ends and are to be a gate type valve.

E. VALVE BOXES: Adjustable cast iron valve boxes of suitable diameter, length, and design shall be furnished and installed for all buried valves. Boxes shall be slid type, with No. 8 or larger round base similar to Buffalo type Mueller No. H-10357 or approved equal.

F. TIE RODS: Three quarters of an inch (3/4") all thread steel rods, or Megalugs, for hydrant clamping shall be galvanized or otherwise rustproof treated. Compatible tie bolts and nuts or clamps shall be similarly rustproof treated. Reinforcing steel shall not be accepted.

G. METALLIC MARKING TAPE: Detectable mylar marking tape shall be similar to Lineguard, Inc. utility marking tape, Type II or approved equal. The tape shall bear the printed identification "Caution: Water Line Below." The printing shall be under mylar (reverse printed) so as to be readable through the clear mylar. The tape shall be "Blue" in color and shall be two inches (2") or one and one half inches (1-1/2") in width, supplied in one thousand (1,000') foot rolls. (In addition to the above locating wire maybe required by the Engineer.)

H. Valve boxes shall be cast-iron screw type with adjustable extension pieces, flared base and minimum thickness of three-sixteenths of an inch (3/16"). The word "water" shall be stamped on cover. Boxes shall be Mueller or approved equal. To be used with ductile iron pipe.

I. Fire hydrants shall be dry top, dry barrel, compression type with valve opening of five and one quarter inches (5-1/4"), double O-ring seals and safety flange, stem coupling and sleeve, and shall conform to AWWA Standard C502. Hydrant valve shall close with the water pressure. Hydrants shall have two (2) two and one half inch (2-1/2") hose nozzles and one (1) four and one half inch (4-1/2") pumper nozzle with National Standard threads, six inch (6") mechanical joint inlet connection, National Standard one and one half inch (1-1/2") pentagon operating nut and outlet nozzle cap nuts, chains on outlet nozzle caps, and harnessing lugs. Hydrants shall open to the left (counterclockwise). Hydrants shall be Mueller Co. No. A-423 Centurion or approved equal.

J. Copper pipe shall conform to Federal Specification WW-T-799, Type K, with Wrought copper fittings and BOCA Plumbing Code.

K. Corporation stops and curb stops shall conform to AWWA requirements and shall be suitable for copper service pipe. Stops shall be Mueller or approved equal.

L. SERVICE CONNECTIONS

1. Service Lines shall be three quarter inch (3/4") (unless otherwise indicated) Type "K" seamless, soft copper tubing, having the ability to be flared and in conformance with ASTM Specification B-88. Adapters shall be supplied as needed in reconnecting existing services.

2. Corporation Stop: Corporation stops shall be three quarter inch (3/4") (unless otherwise indicated) with inlet threads conforming to AWWA C-800, commonly known as the "Mueller" thread, and the outlet compatible with service pipe similar to Mueller No. H-15000 for copper service. Tapping saddles are required for all PVC pipe. Pipe dope or any other materials that contain solvents or components which may be harmful to PVC pipe shall not be used in conjunction with PVC pipe.

3. Tapping Saddles: Saddles shall have cc tap, be made of malleable material and have flat straps. Rubber gaskets shall be required for all pipe sizes and classes. Lead gaskets will not be allowed. Saddles shall provide full support around the circumference of the pipe and have a bearing area of sufficient width along the axis of the pipe, one and one half inch (1-1/2") minimum. Saddles shall not have lugs that will dig into the pipe when the saddle is tightened. The U-bolt type of strap that does not provide sufficient bearing area will not be allowed. Saddles shall be as the Dresser No. 91 double strap for C. I. diameters, or approved equal.

M. A post indicator valve shall be required on the exterior of all buildings equipped with a sprinkler system.

1.02 FACTORY TESTS AND COMPLIANCE STATEMENTS:

Pipe, valves and hydrants proposed for use shall be factory tested in accordance with the requirements of the applicable AWWA Standard referenced herein. The Contractor shall furnish sworn statements from the manufacturers that the inspection and tests specified in the referenced standards have been made and that the results of such inspection and tests, as well as the basic materials, manufacturing and assembly, comply with the requirements of the applicable standard. In addition, actual test results shall be submitted to the Engineer as directed. No pipe, valve or hydrant shall be considered for use in the contract until the manufacturer's certifications, and test results when required, have been approved by the Engineer.

1.03 HANDLING PIPE AND ACCESSORIES:

Pipe, fittings, valves and accessories shall be loaded and unloaded by lifting with hoists or skidding so as to avoid shock or damage. Under no circumstances shall such materials be dropped. Pipe handled on skidways shall not be skidded or rolled against pipe already on the ground. In distributing the material at the site of the work, each piece shall be unloaded opposite or near the place where it is to be laid in the trench. Pipe shall be handled so that the coating and lining will not be damaged. Damaged coating and lining shall be cause for rejection of the pipe and shall be replaced or repaired.

1.04 LAYING PIPE:

A. Installation of pipe and fittings shall be in accordance with AWWA Standard C600 and BOCA Plumbing Code, except as specified or indicated otherwise. The water main shall be laid to a true uniform line and grade from elevations indicated or directed. Unless indicated otherwise, the depth of trench shall be sufficient to provide a minimum cover over the top of the pipe of three and one half feet (3.5') from the existing or proposed ground surface and to avoid interference of the pipeline with other utilities. Pipe shall be laid on continuous grades as indicated or directed to avoid sags or crests in the line.

B. The cutting of pipe for inserting valves, fittings or closure pieces shall be done in a neat and workmanlike manner, without damage to the pipe, so as to leave a smooth end at right angles to the axis of the pipe. Care shall be taken to avoid damaging the lining. Flame cutting of cast iron pipe with oxyacetylene torch will not be permitted.

C. Immediately before lowering the pipe in to the trench, the interior lining and exterior coating will be visually inspected. Pipe with damaged lining or coating shall not be installed.

D. Proper implements, tools and facilities for water main construction shall be provided and used. All pipes, fittings and valves shall be lowered carefully into the trenches by means of derricks, ropes or other suitable equipment. Under no circumstances shall water main materials be dropped or dumped into the trenches. All pipe shall be installed with the bell ends facing the direction of laying and in accordance with the recommendations of the manufacturers of the pipe.

E. Where it becomes necessary to deflect the line of pipe, in either a vertical or horizontal plane, to avoid obstructions, or in locations where long-radius curves are permitted, the amount of deflection shall not exceed that specified in AWWA Standard C600 or paragraph 2-17. Section 4. Deflection at Joints: (most strict standard will govern).

F. Every precaution shall be taken to prevent foreign material from entering the pipe while it is being placed in the line. If the pipe-laying crew cannot put the pipe into the trench and in place without getting earth into it, a heavy, tightly woven canvas bag of suitable size shall be placed over each end of the pipe before lowering the pipe into the adjacent pipe. During laying operations, no debris, tools, clothing or other material shall be placed in the pipe.

G. At times when pipe laying is not in progress, the open ends of pipe shall be closed by a watertight plug or other approved means. This provision shall apply during the noon hour as well as overnight. If water is in the trench, the seal shall remain in place until the trench is pumped completely dry.

H. All pipe in areas of fill shall not be laid until grading operation is complete unless the depth of cover is at least 12" below existing ground line for pipes of other materials.

1.05 TESTING, STERILIZATION, SERVICE CONNECTIONS

All testing, main sterilization and service connections shall conform to the applicable sections of Section 202.00 of the Town's PFM.

END OF SECTION

BID SHEET
TOWN OF WARRENTON
CULPEPER STREET WATERMAIN PROJECT

ITEM	BID QUANTITY	UNIT	BID PRICE	TOTAL
Culpeper Street Water Main				
Mobilization/Demobilization	1	LS		
Temporary Traffic Control Signage	1	LS		
Traffic Barrels	500	EA/DAY		
Flagger Service	1000	HRS		
Temporary Silt Fence	500	LF		
8” Ductile Iron Water Main	1750	LF		
Fire Hydrants	3	EA		
Water Services	8	EA		
Tie-In to Existing Lines	2	EA		
Class C Asphalt Restoration	800	SY		
Fine Grade, Seed , and Mulch	1	LS		
			TOTAL BASE BID	

Optional Bid Items				
Rock Excavation	200	CY		
Undercut	200	CY		
Suitable Fill Material	200	CY		
Concrete Encasement	30	LF		
Compaction Test	5	EACH		
			TOTAL OPTIONAL BID	

_____ _____

COMPANY TITLE

_____ _____

STREET PRINTED NAME

_____ _____

CITY, STATE, ZIP SIGNATURE DATE

EXHIBIT B

TOWN OF WARRENTON, VIRGINIA
GENERAL TERMS AND CONDITIONS
CONSTRUCTION PROJECTS

The following General Terms and Conditions shall become part of all solicitations for construction projects that involve building, altering, repairing, improving or demolishing any structure, building or paving projects, and any draining, dredging, excavation, grading or similar work upon real property. These General Terms and Conditions shall be a part of any such Invitation for Bid/Request for proposal in addition to the General Terms and Conditions - Services.

1. DEFINITIONS:

a. The term "**Town"** shall mean The Town of Warrenton through the governing body or other agent with authority to execute the contract for the Town.

b. The term "**Contractor"** means the person, firm or corporation named such in the contract and includes the plural number and the feminine gender when such are named in the contract as the Contractor.

c. The term "S**ubcontractor"** means only those having a direct contract with the Contractor and it includes one who furnishes material worked to a special design but does not include one who merely furnishes material not so worked.

d. The "**Project Inspector"** means one or more individuals employed or designated by the Town to make inspections, observe progress, approve schedules and accept services under the terms of the contract. The Town shall notify the Contractor in writing of the appointment of such Project Inspector.

2. CONTRACT DOCUMENTS

The contract entered into by the parties shall consist of the Invitation for Bids/Request for Proposals, the signed Bid/Offer submitted by the Contractor, the Town of Warrenton standard contract form or Purchase Order, the General and Special Terms and Conditions, the Specifications with drawings, if any, including all modifications thereof, all which shall be referred to collectively as the Contract Documents.

3. LAWS AND REGULATIONS

a. The Contractor shall give all notices and comply with all laws, ordinances, rules, regulations, and lawful orders of any public authority bearing on the performance of the work.

b. The Contractor and Subcontractor shall comply with the Virginia Contractor's Registration Law, Title 54, Chapter 7, Code of Virginia (1950), as amended. All nonresident Contractors and Subcontractors submitting bids/ proposals on the work described herein shall register with the Department of Labor and Industry under the provisions of the Subsection 40.1-30 of the code of Virginia (1950), as amended.

4. CONDITIONS AT SITE, BUILDING OR STRUCTURE

Bidders/Offerors shall visit the contract work site or sites and shall be responsible for having ascertained pertinent local conditions such as location, accessibility and general character of the site, building or structure, and the character and extent of existing work within or adjacent to the site.

5. PREPARATION AND SUBMISSION OF BIDS/PROPOSALS

a. Bids/proposals must give the full business address of the bidder/ offeror and be signed by him or her with his or her usual signature. Bids/proposals by partnerships must furnish the full name of all partners and must be signed in the partnership name by one of the members of the partnership or any authorized representative, followed by the designation of the person signing. Bids/proposals by Corporations must be signed with the legal name of the corporation followed by the name of the State in which it is incorporated and by the signature and designation of the president, secretary or other person authorized to bind it in the matter. The name of each person signing shall also be typed or printed below the word "President", "Secretary", "Agent", or other designation without disclosing the principal, may be held to be the bid/proposal of the individual signing. When requested by the Town, satisfactory evidence of the authority of the officer signing in behalf of the corporation shall be furnished.

b. Identification Of Bid/Proposal Envelope: The signed bid/proposal should be returned in a separate envelope or package sealed to the Director of Purchasing and identified as follows:

From:

Name of Bidder Due Date Time

Address City/State/Zip Code

Description of Invitation or Request for Proposal

The envelope should be addressed as directed in the solicitation.

6. WITHDRAWAL OR MODIFICATION OF BIDS/PROPOSALS PRIOR TO DUE DATE

Bids/proposals may be withdrawn or modified by written or telegraphic notice received from Bidders/Offerors prior to the time fixed for bid/proposal receipt.

7. RECEIPT AND OPENING OF BIDS/PROPOSALS

a. It is the responsibility of the bidder/offeror to assure that the bid/proposal is delivered to the place designated for receipt of bids/proposals prior to the time set for receipt of bids/proposals. No bid/proposal received after the time designated for receipt of bids/proposals will be considered.

b. Bids received in response to an Invitation for Bids will be opened at the time and place stated in the solicitation and bidder=s names and prices made public for the information of bidders and other interested who may be present either in person or by representative. The Purchasing Director, whose duty it is to open the bids, will decide when the specified time has arrived. No responsibility will be attached to any agent of the Town for the premature opening of a bid not properly addressed or identified. In the case of the proposals received in response to a Request for Proposal, public openings are not required; however, if a public opening is held, only the names of the offerors will be read aloud.

8. WITHDRAWAL OF BID DUE TO ERROR (INVITATION FOR BIDS ONLY)

a. The bidder shall submit to the Purchasing Director his original work papers, document and materials used in the preparation of the bid within two business days after the date fixed for submission of bids. The work papers shall be delivered in person or by certified mail. The bidder shall identify in sufficient detail the nature of the mistake. Such mistake shall be proved only from the original work papers, documents and materials delivered as required herein.

b. No bid may be withdrawn under this section when the result would be awarding the contract on another bid of the same bidder or of another bidder in which the ownership of the withdrawing bidder is more than five percent.

c. If a bid is withdrawn under the authority of this section, the lowest remaining bid shall deemed to be the low bid.

d. No bidder who is permitted to withdraw a bid shall, for compensation, supply any material or labor to or perform any subcontract or other work agreement for the person or firm to whom the contract is awarded or otherwise benefit, directly or indirectly, from the performance of the project for which the withdrawn bid was submitted.

e. If the Town denies the withdrawal of a bid under the provisions of this section, it shall notify the bidder in writing stating the reasons for its decision and award the contract to such bidder at the bid price, provided such bidder is a responsive and responsible bidder.

9. SUBCONTRACTS:

a. The Contractor shall, as soon as practicable after the signing of the contract, notify the Town in writing of the names of Subcontractors proposed for the principle parts of the work. The Contractor shall not employ any Subcontractor that is not responsible or otherwise suitable. The Town shall not direct the Contractor to contract with any particular Subcontractor, however, the Town may disapprove the use of any Subcontractor deemed unsuitable.

b. The Contractor must agree that he is fully responsible to the Town for the acts and omissions of the Subcontractors and of persons either directly or indirectly employed by them as well as those persons directly employed by the Contractor himself.

10. SEPARATE CONTRACTS:

The Town reserves the right to let other contracts in connection with the project or services, the work under which will proceed simultaneously with the performance of the Contract. The Contractor shall afford other separate contractors reasonable opportunity for the introduction and storage of their materials and the performance of their work. The Contractor shall take all reasonable action to coordinate his or her work with the separate contractors. If the work done by the separate contractor is defective or so performed as to prevent the Contractor from carrying out the work according to the plans and specifications, the contractor shall immediately notify the Town upon discovering such conditions.

11. PROJECT INSPECTOR AS THE TOWN'S AGENT:

a. The Project Inspector shall use all powers under the Contract to enforce its faithful performance. The Project Inspector shall determine the amount, quality, acceptability, and fitness of all parts of the work; shall interpret the Contract Documents and extra work orders; and shall decide all other questions in connection with the work. The Project Inspector shall recommend suspension of the work whenever such suspension may be necessary to ensure the proper execution of the Contract. The Project Inspector shall have no authority to approve or order changes in the work which alter the concept or which call for an extension of time or a change in the contract price. Upon request, the Project Inspector shall confirm in writing within ten (10) days any oral order, direction, requirement or determination.

b. All orders from the Town shall be transmitted through the Project Inspector.

12. INSPECTION:

a. All materials and workmanship, if not otherwise designated by the specifications, shall be subject to inspection, examination and test by the Project Inspector at any and all times during manufacture and/or construction. The Project Inspector shall have authority to reject defective material and workmanship and require its correction. Rejected workmanship shall be satisfactorily

corrected and rejected material shall be satisfactorily replaced with proper material without charge therefore, and the Contractor shall promptly segregate and remove the rejected material from the premises. If the contractor fails to proceed at once with replacement of rejected material and/or the correction of defective workmanship, the Town may, by contract or otherwise, replace such material and/or correct such workmanship charging the cost to the contractor. The Town may terminate the right of the Contractor to proceed as provided in the Default Clause, the Contractor being liable for any damage to the same extent as provided in the Default Clause for termination thereunder.

b. The Project Inspector may recommend to the Town that the work be suspended when in his or her judgment the intent of the plans and specifications is not being followed. Any such suspension shall be continued only until the matter in question is settled to the satisfaction of the Town. The cost of any such work stoppage shall be borne by the Contractor unless it is later determined that no fault existed in the Contractor=s work.

c. The Project inspector may immediately suspend any work which is being pursued in an unsafe manner and where in his or her judgment, the potential for serious personal injury or property damage exists.

d. The Project Inspector shall not:

1. Authorize deviations from the Contract Documents;
2. Enter into the area of responsibility of the Contractor=s superintendent;
3. Issue directions relative to any aspect of means, methods, techniques, sequences, or procedures;
4. Issue a certificate for payment.

13. SUPERINTENDENCE BY CONTRACTOR:

a. The Contractor shall be responsible for all means, methods, techniques, sequences and procedures and for coordinating all portions of the work under the Contract except where otherwise specified in the Contract Documents.

b. The Contractor shall, at all times, enforce the strict discipline and good order among the workers on the project, and shall not employ on the site any unfit person or anyone not skilled in the work assigned to him or her.

14. CONTRACTOR'S TITLE TO MATERIALS

No materials or supplies for the work shall be purchased by the contractor or by any Subcontractor subject to any chattel mortgage or under a conditional sales or other agreement by which an interest is retained by the seller. The Contractor warrants that he has clear title to all materials and supplies for which he invoices for payment.

15. WARRANTY OF MATERIALS AND WORKMANSHIP

a. The Contractor warrants that, unless otherwise specified, all materials and equipment incorporated in the work under the contract shall be new, first class, and in accordance with the Contract Documents and shall be performed by persons qualified in their respective trades.

b. Work not conforming to these warranties shall be considered defective.

c. This warranty of materials and workmanship is separate and independent from and in addition to any other guarantees in this Contract.

16. USE OF PREMISES AND REMOVAL OF DEBRIS

a. The Contractor expressly undertakes, either directly or through its Subcontractor:

1. To perform this Contract in such a manner as not to interrupt or interfere with the operation of any existing activity on the premises or at the location of the work;
2. To store its apparatus, materials, supplies, and equipment in such an orderly fashion at the site of the work as will not unduly interfere with the progress of its work or the work of the Town or any other Contractor; and
3. To place upon the work or any part thereof only such loads as are consistent with the safety of that portion of the work.
4. To effect all cutting, filling or patching of its work required to make the same conform to the plans and specifications, and except with the consent of the Project Inspector, not to cut or otherwise alter the work of any other contractor. The Contractor shall not damage or endanger any portion of the work by cutting, patching or otherwise altering any work, or by excavation.
5. To clean up frequently all refuse, rubbish, scrap, materials and debris caused by its operations, to the end that at all times the site of the work shall present a neat, orderly and workmanlike appearance.

17. PROTECTION OF PERSONS AND PROPERTY

a. The Contractor expressly undertakes, both directly and through its Subcontractors, to take every precaution at all times for the protection of persons and property, including the Town=s employees and property and its own.

b. The Contractor shall be responsible for initiating, maintaining and supervising all safety precautions and programs in connection with the work.

c. The Contractor shall continuously maintain adequate protection of all work from damage and shall protect the Town=s property from injury or loss arising in connection with this contract. The Contractor shall make good any such damage, injury, or loss, except such as may be directly due to errors in the Contract Documents or caused by agents or employees of the Town. The Contractor shall adequately protect the adjacent property as provided by law and the Contract Documents, and shall provide and

maintain all passageways, guard fences, lights and other facilities for protection required by public authority, local conditions, or any of the Contract Documents.

d. In an emergency affecting the safety or life of individuals, or of the work, or of adjoining property, the Contractor, without special instruction or authorization from the Town, is hereby permitted to act at its discretion, to prevent such threatened loss or injury. Also, should the Contractor in order to prevent threatened loss or injury, be instructed or authorized to act by the Town, he shall so act, without appeal. Any additional compensation or extension of time claimed by the Contractor on account of any emergency work shall be determined as provided by Section 18, "Changes in the Work."

18. CHANGES IN THE WORK

a. The Town may at any time by written order, make changes in the work of this Contract and within the general scope thereof, except that no fixed price contract may be increased by more then twenty-five percent of the amount of the contract or ten thousand dollars ($10,000), whichever is greater. In making any change, the charge or credit for the change shall be determined by one of the following methods as selected by the Town.

1. The change order shall stipulate the mutually agreed price that shall be added to or deducted from the contract price. If the price change is an addition to the contract price, it shall include the Contractor's overhead and profit.
2. By estimating the number of unit quantities of each part of the work which are changed and then multiplying the estimated number by of such unit quantities by the applicable unit price (if any) set forth in the contract or other mutually agreed unit price. If the Town decides to authorize work in accordance with until price, measurement of unit quantities shall be on a net basis.

3. By ordering the Contractor to proceed with the work and to keep, and present in such form as the Town may direct, a correct account of the cost of the change together with all vouchers therefore. The cost shall include an allowance for overhead and profit to be mutually agreed upon by the Town and the Contractor.

b. The Contractor shall furnish the Town with an itemized breakdown of the quantities and prices used in computing the value of any change that might be ordered.

c. In figuring changes, instructions for measurements of quantities set forth in the specifications shall be followed.

d. All change orders must indicate that the completion date of the project is either not extended or is extended by a specific number of days. Both the old, and if there is one, the new date must be stated.

19. CONTRACTOR'S RIGHT TO STOP WORK OR TERMINATE CONTRACT

If the work should be stopped under any order of any court or other public authority for a period of three (3) months through no fault of the Contractor or of anyone employed by the Contractor, or if the Town should arbitrarily fail to issue any certificate for payment within a reasonable time after they are due, or if the Town should fail to pay the Contractor within thirty (30) days any sum certified by the Town, then the Contractor may, upon fourteen (14) calendar days written notice to the Town, stop work or terminate the contract. The Contractor may then recover the Town payment for the cost of the work actually performed, together with the overhead and profit thereon, but profit shall be recovered only to the extent that the contractor can demonstrate that there would have been a profit on the entire contract if the work had been completed. The Contractor may not receive profit or any other type of compensation for parts of the work that were not performed. The Contractor may recover the cost of physically closing down the job site, but no other costs of termination. The Town may offset any claims it may have against the Contractor against the amounts due to the Contractor.

20. TOWN'S RIGHT TO TERMINATE CONTRACT

a. If the Contractor should be adjudged bankrupt, or if he or she should make a general assignment for the benefit of his creditors, or if a receiver should be appointed on account of his or her insolvency, the Town may terminate the Contract. If the Contractor should persistently or repeatedly refuse or should fail, except in cases for which extension of time is provided, to supply enough properly skilled workers or proper materials, or if he should fail to make prompt payment to Subcontractors or for material or labor, or persistently disregards laws, ordinances or the instructions of the Town, or otherwise be in substantial violation of any provision of the contract, then the Town may terminate the contract.

b. Prior to the termination of the Contract, the Town shall give the Contractor fourteen (14) calendar days written notice. Upon termination of the contract, the Town shall take possession of the premises and of all materials, tools and appliances thereon and finish the work by whatever method deemed expedient. In such case the Contractor shall not be entitled to receive any further payment. If the expense of finishing the work, including compensation for additional managerial and administrative services, shall exceed the unpaid balance of the contract price, the Contractor shall pay the difference to the Town. The expense incurred by the Town as herein provided, and the damage incurred through the Contractor=s default, shall be certified by the Town.

c. Termination of the Contract under this section is without prejudice to any other right or remedy of the Town.

21. NOTICE OF REQUIRED DISABILITY LEGISLATION COMPLIANCE

The Town of Warrenton is required to comply with state and federal disability legislation: The Rehabilitation Act of 1993 Section 504, The Americans with Disabilities Act (ADA) for 1990 Title II and the Virginians with Disability Act of 1990.

Specifically, the Town of Warrenton, may not, through its contractual and/or financial arrangements, directly or indirectly avoid compliance with Title II of the Americans with Disabilities Act, Public Law 101-336, which prohibits discrimination by public entities on the basis of disability. Subtitle A protects qualified individuals with disability from discrimination on the basis of disability in the services, programs, or activities of all State and local governments. It extends the prohibition of discrimination in federally assisted programs established by the Rehabilitation Act of 1973 Section 504 to all activities of State and local governments, including those that do not receive Federal financial

assistance, and incorporates specific prohibitions of discrimination on the basis of disability in Titles I, III, and V of the Americans with Disabilities Act. The Virginians with Disabilities Act of 1990 follows the Rehabilitation Act of 1973 Section 504.

Exhibit C

Mandatory Requirement
(To be executed and submitted with bid)

Any person submitting a bid for construction work to any building, highway, sewer or other structure, the performance of which would require a contractor's license pursuant to the provisions of Sec. 54.1-1100 of the Code of Virginia, 1950, as amended, be required to submit **as part of their bid**:

> Satisfactory proof that such person is duly licensed under the terms of Sec. 54.1-1100 of the Code of Virginia, 1950, as amended, including the furnishing of any such contractor's number. **A copy of your contractor's license can be attached to this form to meet this requirement.**

I certify that the _____ State Contractors License of

_____ , doing business as

_____is in

good standing and not subject to licensure as a contractor, subcontractor or owner/developer

pursuant to Sec. 54.1-1100 of the Code of Virginia, 1950, as amended.

Signed and sealed this _____ of _____, 20 ____.

_____
Principal

_____
Title

State of Virginia, County of _____ , to wit:

The foregoing instrument was acknowledged before me the _____ day of _____, 20 ___ by

_____.

_____
Notary Public

_____
My Commission Expires: